INSTALLATION ACTION PLAN
For
SUNFLOWER ARMY AMMUNITION PLANT

FY2005

printed March 2004

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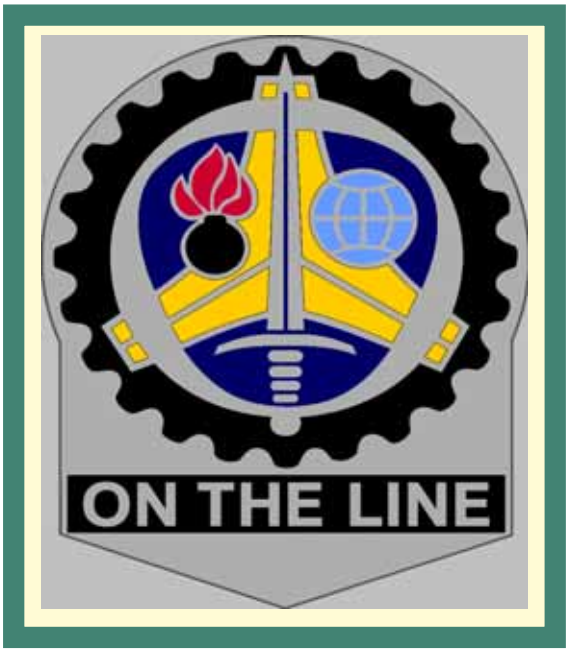
For
SUNFLOWER ARMY AMMUNITION PLANT



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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program (IRP) for Sunflower Army Ammunition Plant (SFAAP). The plan will define all IRP requirements and propose a comprehensive approach and associated costs to conduct future investigations and remedial actions at each IRP site at the installation.

In an effort to document planning information for the IRP manager, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for SFAAP. The IAP is used to track requirements, schedules, and tentative budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change. The goal is to have all remedies in place at SFAAP by the end of 2009. Long-term monitoring and remedial action operations will be conducted beyond 2009.

The following agencies contributed to the formulation and completion of the FY05 Sunflower Army Ammunition Plant Installation Action Plan:

Engineering & Environment, Inc.

Johnson County Environmental Department

Kansas Department of Health and Environment

Shaw Environmental, Inc.

SpecPro, Inc.

Sunflower Army Ammunition Plant

Sunflower AAP Restoration Advisory Board

U.S. Army Corps of Engineers, Kansas City District

U.S. Army Environmental Center

U.S. Environmental Protection Agency, Region VII

Acronyms & Abbreviations

~	approximate
ADA	Ammunition Destruction Area
AEDB-R	Army Environmental Database - Restoration (formerly DSERTS)
AEHA	Army Environmental Hygiene Agency
AOC	Area of Concern
ARDC	Armaments Research and Development Center
BRAC	Base Realignment and Closure
CAMU	Corrective Action Management Unit
COE	Corps of Engineers
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
cy	cubic yards
DA	Department of the Army
DD	Decision Document
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DRO	Diesel Range Organics
DSERTS	Defense Site Environmental Restoration Tracking System (noe AEDB-R)
EBS	Environmental Baseline Study
EP	Extraction Procedure
EPA	United States Environmental Protection Agency
ER,A	Environmental Restoration, Army (formerly DERA)
FFA	Federal Facility Agreement
FORSCOM	U.S. Army Forces Command
FS	Feasibility Study
ft	feet
ft^3	cubic feet
FY	Fiscal Year
gal	gallon
GSA	General Services Administration
GW	Groundwater
HQ	Headquarters
IAP	Installation Action Plan
IAG	Interagency Agreement
IRA	Interim Removal Action
IRP	Installation Restoration Program
IWTF	Industrial Wastewater Treatment Facility
KDHE	Kansas Department of Health and Environment
LAP	Load, Assemble, Pack
LTM	Long-term Management or Monitoring
LTO	Long-term Operation
MACOM	Major Command
MCL	Maximum Contaminant Level
NC	Nitrocellulose
NCP	National Contingency Plan
NFA	No Further Action
NFRAP	No Further Remedial Action Planned
NG	Nitroglycerine
NOV	Notice of Violation

Acronyms & Abbreviations

NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NQ	Nitroguanidine
O&M	Operations & Maintenance
OB/OD	Open Burning / Open Detonation
OMA	Operations and Maintenance - Army
OBG	Open Burning Grounds
OU	Operable Unit
OSC	Operations Support Command (replaced IOC)
PA	Preliminary Assessment
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenal
PP	Proposed Plan
ppb	Parts Per Billion
ppm	Parts Per Million
PRG	Potential Responsible Party
PY	Prior Year
RA	Remedial Action
RA(C)	Remedial Action - Construction
RA(O)	Remedial Action - Operation
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Cyclotrimethylenetrinitramine
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
S&A	Supervision and Adminstration
SFAAP	Sunflower Army Ammunition Plant
SI	Site Inspection
S&R	Supervision and Review
SVOCs	Semi Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TNT	2,3,4 - Trinitrotoluene
TPH	Total Petroleum Organics
TRADOC	Training Doctrine Command
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAEC	United States Army Environmental Center
USAR	United States Army Reserve
USARC	United States Army Reserve Command
USATHMA	United States Army Toxic and Hazardous Material Agency (replaced by AEC)
UST	Underground Storage Tank

UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds

CERCLA AND RCRA ACRONYM CONVERSIONS

CERCLA		RCRA
PA Preliminary Assessment	=	**RFA** RCRA Facility Assessement
SI Site Investigation	=	**CS** Confirmation Study
RI/FS Remedial Investigation/ Feasibility Study	=	**RFI/CMS** RCRA Facility Investigation/Corrective Measures Study
RD Remedial Design	=	**CMD** Corrective Measures Design
RA(C) Remedial Action (Construction)	=	**CMI(C)** Corrective Measures Implementation (Construction)
RA(O) Remedial Action (Operations)	=	**CMI(O)** Corrective Measures Implementation (Operation)

Summary

STATUS:	RCRA Part B Permit. Proposed for NPL in Feb, 1995. Remains on proposed list.
Total # OF AEDB-R Sites:	54
Active AEDB-R sites:	39
RIP with LTM:	6= SAAP-013, 033, 035, 041, 048, 050
Response Complete Sites:	9
Sites to be added to AEDB-R:	14= SAAP-058, 060, 063-067, 101, 110, 112, 114, 115, 116, 122
MMRP Sites:	0

DIFFERENT SITE TYPES:

4 Burn Areas	1 Contaminated Groundwater
1 Contaminated Fill	3 Contaminated Sediments
7 Surface Disposal Areas	4 Drainage Ditches
1 Disposal Pit/Dry Well	1 Incinerator
5 Landfills	1 Oil/Water Separator
1 Pesticide Shop	5 Storage Areas
14 Surface Impoundment/Lagoons	2 Spill Site Areas
1 Sewage Treatment Plant	1 AST
2 Waste Treatment Plants	

CONTAMINANTS OF CONCERN:

Nitrocelluose, Nitroglycerine, Nitroguanidine, Propellants, Nitrates, Pesticides, Heavy Metals

MEDIA OF CONCERN:

Groundwater, Surface Water, Sediment, and Soil

COMPLETED REM/IRA/RA:

- Interim Remedial Action performed at SWMU 50 in FY97
- Lagoon Closure performed as Remedial Action in FY97
- Completed RA for SWMU 10 & 11 in FY01
- Completed IRA for SWMU 18, 32, 33, 34, 35

See REM/IRA/RA Section for complete list

CURRENT (FY05) IRP PHASES AEDB-R ONLY:	RI/FS at 8 sites	IRA at 2 sites	RD at 4 sites
	RA at 2 sites	LTM at 6 sites	
PROJECTED IRP PHASES AEDB-R ONLY:	RI/FS at 21 sites	IRA at 1 site	RD at 25 sites
	RA at 28 sites	RA(O) at 3 sites	LTM at 18 sites

IDENTIFIED POSSIBLE REM/IRA/RA AEDB-R ONLY:

IRA at SAAP-001, 019, 039
RA at SAAP-002, 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 017, 018, 020, 021, 022, 024, 025, 026, 030, 031, 036, 037, 038, 040, 045, 046, 047, 051, 053

DURATION:

Year of Inception:	1980
Year of Completion Excluding LTM:	2009
Year of Completion Including LTM:	2035

Installation Information

SITE DESCRIPTION:	The Sunflower Army Ammunition Plant is located on 9,065 acres in rural north-western Johnson County, Kansas. It is approximately 3 miles southwest of DeSoto, Kansas and 28 miles southwest of Kansas City. It is roughly rectangular and about 6 miles long by 3 miles wide, with the long axis oriented in a north-south direction.
IRP EXECUTING AGENCIES:	U.S. Army Corps of Engineers, Kansas City District
REGULATORY PARTICIPATION:	**Federal:** U.S. Environmental Protection Agency, Region VII, RCRA Branch **State:** Kansas Department of Health and Environment, Bureau of Environmental Remediation
REGULATORY STATUS:	RCRA Part B approved permit (effective 9 December 1991). Proposed for NPL listing in Feb, 1995.
MAJOR CHANGES IN PRIOR YEAR:	None

Installation Description

Sunflower Army Ammunition Plant (SFAAP) is a non-BRAC excess installation being disposed of by GSA. The state of Kansas has expressed interest in obtaining the plant property in its entirety.

HISTORIC ACTIVITY INFORMATION

Sunflower Army Ammuntion Plant, originally known as the Sunflower Ordnance Works, was established in 1941 on 10,747 acres as the world's largest powder and propellant plant. Production of propellant began in 1943 and played a significant role in U.S. history by providing munitions for three major military conflicts - WWII, the Korean Conflict and the Vietnam Conflict. The installation has been determined to be in excess of Army needs, and GSA has begun the process of disposing of all Sunflower property.

Additional installation operations included the manufacture and regeneration of nitric and sulfuric acids, and munitions proving.

During the course of its 50-plus years of operation, various hazardous substances were released both inadvertently and intentionally to the environment. These releases, which are not uncommon at major industrial facilities, were from production line areas and 54 RCRA solid waste management units (SWMUs). The EPA proposed listing the installation on the National Priorities List (NPL) in 1995.

Preliminary investigations have been conducted on all SWMUs. In addition to studying each SWMU, four SWMUs have received final closure. Studies show that seven SWMUs will not require any remedial action. Special work perfomed on the plant includes a community relations plan, groundwater investigation, a benthic macroinvertebrate study, grazing study, ecological risk assessment, public health assessment (ATSDR), an off-site well survey, and an installation-wide stream study.

The plant has an active RAB that represents a broad range of community views. An active Technical Review Committee consisting of installation personnel, EPA, KDHE, the U.S. Army Corps of Engineers, and contractors meets monthly to discuss restoration activities and devise ways to accelerate the cleanup program.

Thirteen new SWMUs and 22 AOCs were identified in the 1998 installation-wide Environmental Baseline Survey. USACHPPM performed relative risk site evaluations on those sites that are eligible for ER,A funding.

Contamination Assessment

Sunflower Army Ammunition Plant no longer has a military mission. The property is in the process of being disposed of by GSA.

Past sampling has revealed that hazardous substances are in the soil, sediment and groundwater beneath the plant. Sunflower is continuing concentrated efforts to demolish buildings and cleanup all production sites contaminated with these materials.

Fifty-four Solid Waste Management Units (SWMUs) are included in the RCRA investigations. During preparation of RFI work plans (1993), the SWMUs were subdivided into six groups based on industrial activities, treatment processes and disposal methods. These categories are: N-5 Propellant Production Sites, Nitroguanidine Production Site, Landfill Sites, Waste Treatment Sites, Support Area Sites, and a Single Base Propellant Area.

As site specific sample data becomes available from the initial RFI studies, discussions are held at regular intervals with the Project team, EPA and KDHE to ensure that the IRP program continues to address those SWMUs with the greatest potential to impact human health and the environment.

A corrective measures study (CMS) was completed for SFAAP-010, 011, 022, and 032. The corrective measures implementation (CMI) for SFAAP-010 and 011 was completed in FY00. A Groundwater Study and Grazing Study were completed. An IRA was completed for SWMUs 18, 32, 33, 34 and 35 in FY02.

Based on this process, the current planned responses include completing RFI reports for those SWMUs where investigations are under way, collecting data on the nature and extent of contamination at SWMUs that are yet to be characterized, beginning CMSs on the highest priority SWMUs and undertaking CMIs at SWMUs where required.

The State of Kansas' plan to acquire all plant property and transfer it to a private corporation for redevelopment is a major uncertainty which may affect the cleanup schedule and type of action for many of the SWMUs. The Kansas Department of Health and Environment is developing a consent order describing cleanup activities a third party owner must complete.

The activities detailed in this IAP will be accomplished using specifically appropriated funds for the cleanup of contamination resulting from past releases of potentially hazardous substances to the environment. In addition, the Army also separately addresses additional environmental issues, including concerns related to existing structures and equipment, and are paid for through the yearly allocation of funds.

Previous Studies

Title	Date	Author
Field Sampling Analysis Work Plan RCRA Facility Investigation (RFI) SWMU 10, F-Line Product Area (Upland) Revision 0	19 Jan 04	Shaw Environmental
Treatability Study (Site Wide) Draft Final Field Sampling Plan	6 Jan 04	Shaw Environmental
Treatability Study (Site Wide) Draft Final Work Plan	6 Jan 04	Shaw Environmental
RCRA Facility Investigation Report Addendum, SWMU 44 - Tank T784 (Revision A)	9 Jan 04	Shaw Environmental
Data Submittal for Field Work (10-17-02 through 6-9-03 Time Period)	22 Dec 03	Shaw Environmental
Corrective Measures Implementation Work Plan (Draft) - SWMU 22	15 Dec 03	Shaw Environmental
Field Sampling and Analysis Work Plan, SWMU 22 - Old Explosive Waste Burning Ground (Draft Final) (Revision B)	15 Dec 03	Shaw Environmental
RCRA Facility Investigation Report Addendum - SWMU 45, Building 9040, Conveyors and Storage Units (Draft)	3 Dec 03	Shaw Environmental
Engineering Evaluation and Cost Analysis for On-Site and Off-Site Disposal of Non-Hazardous Contaminated Soils at SFAAP (CAMU Study) (Draft)	1 Dec 03	Shaw Environmental
Field Sampling and Analysis Work Plan, RCRA Facility Investigation, SWMU 20, Ash Lagoons and Sludge Disposal Area (Revision B) (Draft Final)	17 Nov 03	Shaw Environmental
USACHPPM Relative Risk Site Evaluation	1 Nov 03	Battelle Eastern Science and Tech Center
Stockpile Management Plan for SWMU 22 (Draft)	30 Oct 03	Shaw Environmental
Annual Waste Disposal Area Inspection - SWMU 50	1 Oct 03	Environmental Chemical Corp
Annual Waste Disposal Area Inspections - SWMU 50 - Disposal Site East of Classification Yard	1 Oct 03	KC Dist, Corps of Eng
Soil Bioremediation Pilot Test Work Plan (Draft), SWMU 21 (Revision A)	1 Oct 03	Shaw Environmental
Interim Remedial Action Report (Final), SWMUs 18, 32, 33, 34, and 35	26 Sep 03	Shaw Environmental
RCRA Facility Investigation Report Addendum, SWMU 39, South Acid Drainage Ditches (Draft)	22 Sep 03	Shaw Environmental
Data Summary Report, SWMUs 13, 27, and 48, May 2002 Initial Sampling Event and Fall 2002 Subsurface Investigation	1 Sep 03	Environmental Chemical Corp
Long-Term Monitoring Work Plan, SWMUs 11 and 41	1 Sep 03	Environmental Chemical Corp
Quality Control Summary Report and Subsurface Investigation - SWMUs 11, 13, 27, 41, and 48	1 Sep 03	Environmental Chemical Corp
Field Sampling and Analysis Work Plan (Draft), SWMU 22, Old Explosive Waste Burning Ground	13 Aug 03	Shaw Environmental
Fielding Sampling and Analysis Work Plan (Draft) - SWMU 3, Main Sewage Treatment Plant	14 Aug 03	Shaw Environmental
RCRA Facility Investigation Report Addendum, SWMU 1 - The Classification Yard (Draft)	14 Aug 03	Shaw Environmental
Field Sampling and Analysis Work Plan, RCRA Facility Investigation, SWMU 38, Oil Separator (Draft)	4 Aug 03	Shaw Environmental
Initial Sampling Event, May 2002 - Final Quality Control Summary Report	1 Aug 03	Environmental Chemical Corp
Closed, Transferring, and Transferred Range/Site Inventory Report	1 Aug 03	For AMC by Engineering Environmental Mgt, Inc.
SFAAP Installation Action Plan - FY 2004	1 Aug 03	KC Dist, Corps of Eng
Field Sampling and Analysis Work Plan, RCRA Facility Investigation, SWMU 14, Static Rocket Test Area (Draft)	17 Jul 03	Shaw Environmental
Field Sampling and Analysis Work Plan, SWMU 52, Paint Bay, Building 542 and Tire Shop	2 Jul 03	Shaw Environmental
Site-Wide Stabilization Treatability Study Work Plan (Draft)	2 Jul 03	Shaw Environmental
Annual Waste Disposal Area Inspection - SWMU 50	1 Jul 03	Environmental Chemical Corp

Previous Studies

Title	Date	Author
Proposed Ratification of Original Finding of No Significant Impact (FONSI) for SFAAP Proposed Property Disposal	1 Jul 03	General Services Administration
Long-Term Monitoring Work Plan, SWMUs 11, 33, 34, and 35	1 Jul 03	KC Dist, Corps of Eng
Field Sampling Work Plan (Draft) - SWMU 44 - Tank T784 (Revision A)	27 Jun 03	Shaw Environmental
RCRA Facility Investigation Addendum Field Sampling Work Plan, SWMUs 13, 27, 41, and 48 (Draft)	20 Jun 03	Shaw Environmental
Preliminary Finding of Suitability for Early Transfer of SFAAP	1 May 03	US Army
Sampling and Analysis Plan for Study #37-MA-00RF, Relative Risk Site Evaluation	17-18 Mar 03	USACHPPM
Work Plan for Long-Term Operations/Long-Term Monitoring, SWMUs 11, 41, and 50	1 Mar 03	Environmental Chemical Corp
Memorandum of Agreement Between GSA, Army, Advisory Council for Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO), Re Disposal of SFAAP	1 Mar 03	Tetra Tech
Field Sampling and Analysis Work Plan, SWMU 21 (Revision B)	18 Feb 03	Shaw Environmental
Finding of Suitability for Early Transfer (FOSET) - SFAAP	1 Feb 03	US Army
Subsurface Investigation Plan for SWMUs 13, 27, 41, and 48	1 Jan 03	Environmental Chemical Corp
RCRA Facility Investigation Sites Field Sampling Work Plan (Draft Final) Revision B, SWMUs 1, 39 and 45/47	1 Jan 03	Shaw Environmental
Interim Remedial Action Work Plan, SWMUs 32, 33, 34 and 35 (Revision B)	1 Dec 02	Shaw Environmental
Stream Study Work Plan, Final Phase I	1 Dec 02	Shaw Environmental
Site Safety and Health Plan Addendum for Long-Term Monitoring of SWMUs 11, 13, 27, 41, 48 and 50	1 Nov 02	Environmental Chemical Corp
RCRA Facility Investigation Site Field Sampling Work Plan, SWMUs 1, 30, 45/47 (Draft)	1 Nov 02	Shaw Environmental
SFAAP Installation Restoration Program (IRP) Contractor Quality Control Plan (Global Planning Copy)	1 Oct 02	Shaw Environmental
Stream Study Work Plan	1 Oct 02	Shaw Environmental
Safety, Health and Emergency Response Plan (Revision A)	1 Sep 02	KC Dist, Corps of Eng
Site Specific Work Plan Addendum, Subsurface Investigation Plan and Site Safety and Health Plan Addendum, Long-Term Monitoring Operations/LTM for SWMUs 11, 13, 27, 41, 48 and 50	1 Aug 02	Environmental Chemical Corp
Quality Control Summary Report for SWMU 2 and Additional Investigation, Volumes I and II (Revision A) (Draft)	1 Aug 02	IT Corporation
RCRA Facility Investigation Report Addendum for SWMU 2 River Water Treatment Plant Lagoons 1, 2 and 3 (Revision A) (Draft)	1 Aug 02	IT Corporation
SFAAP Installation Action Plan - FY 2003	1 Jul 02	KC Dist, Corps of Eng
Lead Analysis Project	17 May 02	IT Corporation
Initial Sampling Plan for SWMUs 13, 27 and 41	1 May 02	Environmental Chemical Corp
Supplemental RCRA Facility Investigation Report and Quality Control Summary Report Addendum for SWMU 14, the Static Rocket Test Area	1 Apr 02	Burns and McDonnell
Supplemental RCRA Facility Investigation Report and Quality Control Summary Report Addendum for SWMU 212 - The Contaminated Materials Burning Ground, Volumes I and II	1 Apr 02	Burns and McDonnell
Environmental Compliance Audit of SFAAP (30 July -3 August 2001)	1 Apr 02	US Army
Final RCRA Facility Investigation Report Addendum for SWMUs 33, 34, & 35 - Half Tanks and Settling Ponds - Volumes I and II	1-Apr-02	Burns and McDonnell
Annual Landfill Inspection Report - SWMU 50	19 Mar 02	Environmental Chemical Corp
ATSDR Public Health Assessment	4 Mar 02	ATSDR
SWMU 2 Field Sampling and Analysis Work Plan (Revision A)	1 Mar 02	Law Environmental, Inc.

Previous Studies

Title	Date	Author
Final Grazing Study Report - Sunflower AAP, Volumes I and II	1-Jan-02	Burns and McDonnell
Final Interim Remedial Action Work Plan, SWMUs 18 and 19	1-Jan-02	IT Corporation
SFAAP Installation Action Plan - 2001	2001	KC Dist, Corps of Eng
Final Site Safety and Health Plan - Total Environmental Restoration Contract, SWMUs 2, 18, 32, 33, 34, 35	1-Dec-01	IT Corporation
Integrated Natural Resources Management Plan	1 Oct 01	US Army Natural Resources Manager
Final Remedial Action Summary Report, SWMUs 10 & 11	1-Oct-01	IT Corporation
Interim Remedial Action Work Plan (Draft) (Revision A) for SWMUs 23, 33, 34, and 35	1 Sep 01	IT Corporation
Characterization of Explosively Contaminated Sewer Lines	1 Aug 01	MKM Engineers, Inc.
Remedial Action Summary Report - SWMUs 10 and 11	1-Aug-01	IT Corporation
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 26 - Single Base Area Wastewater Settling Pumps	1-Jun-01	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and QUALITY CONTROL SUMMARY REPORT for SWMU 30 - Pesticide Waste Handling Area	1-Jun-01	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and QUALITY CONTROL SUMMARY REPORT for SWMUs 7, 8, and 9 - North Acid Area	1-Jun-01	Burns and McDonnell
Final Project Closure Report for SWMU 50 Interim Removal, Volumes I & II	1-Mar-01	Environmental Chemical Corp
Final Lead Stabilization Work Plan, SWMUs 10 & 11	1-Feb-01	IT Corporation
Final Treatability Planning & Reporting Documents, SWMUs 10 & 11	1-Feb-01	IT Corporation
Final Waste Management and Disposal Plan, SWMUs 10 & 11	1-Feb-01	IT Corporation
Final Quality Control Plan - Implementation of Corrective Measures at SWMUs 10 & 11	1-Jan-01	IT Corporation
Final Sampling and Analysis Plan, Volumes I & II, SWMUs 10 & 11	1-Jan-01	IT Corporation
Final Site Safety and Health Plan, SWMUs 10 & 11	1-Jan-01	IT Corporation
SFAAP Installation Action Plan - 2000	2000	KC Dist, Corps of Eng
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 25 - Nitrocellulose Area Ditches	1-Nov-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 45 - Building 9040 Calcium Cyanamide Conveyors and Storage Units	1-Nov-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMUs 41 and 42 - Calcium Carbonate Cake and Temporary Sanitary Landfills	1-Nov-00	Burns and McDonnell
Environmental Baseline Assessment for Koch Sulfur, Inc.	11 Oct 00	Terracon
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 17 - G-Line Area Ditches	1-Oct-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 49 - Road Just Southeast of the Sanitary Landfill	1-Oct-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum for SWMU 16 - Temporary Waste Storage Magazines	1-Oct-00	Burns and McDonnell
Site Specific Work Plan Addendum, Draft Geoprobe Investigation Plan and Draft Site Safety and Health Plan Addendum for SWMUs 13, 24, 41 and 50	1 Sep 00	Environmental Chemical Corp

Previous Studies

Title	Date	Author
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 44 - Tank T784	1-Jun-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 20 (Ash Lagoons & Sludge Disposal Area)	1-May-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 40 (Calcium Carbide Disposal Area)	1-May-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 43 (Tunnel Dryers)	1-May-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 15 (Waste Storage Magazine)	1-Apr-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 39 (South Acid Area Drainage Ditch)	1-Apr-00	Burns and McDonnell
Final RCRA Facility Investigation Report; Addendum and Quality Control Summary Report for SWMU 46 (Decontamination Oven)	1-Apr-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 37 (Sandblast Area)	1-Mar-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 38 (Oil Separator)	1-Mar-00	Burns and McDonnell
Final RCRA Facility Investigation Report Addendum and Quality Control Summary Report for SWMU 52 (Paint Bay, Bldg 542 and Tire Shop)	1-Mar-00	Burns and McDonnell
Final Storm Water Pollution Prevention Plan, SWMUs 10 / 11	1-Feb-00	IT Corporation
Geology, Hydrogeology and Groundwater Quality Study	1 Feb 00	Burns and McDonnell
Explosives Safety Submission Ordnance, Explosives Remedial Actions - SFAAP	1 Jan 00	IT Corporation
Final Site Safety and Health Plan, SWMUs 10 / 11	1-Jan-00	IT Corporation
RCRA Facility Investigation Report and Quality Control Summary Report Addendum for SWMUs 33, 34 and 35 - Half Tanks and Settling Ponds (Draft)	1 Dec 99	Burns and McDonnell
Miscellaneous - Kansas Department of Health and Environment (KDHE) Industrial Solid Waste Disposal Authorizations - Asbestos Abatement Waste Generated From Environmental Stabilization Program (ESP) II	5-Nov-99	Kansas Department of Health and Env
Final Flocculation and Clarification Treatability Study Report - SWMUs 10 / 11	1-Nov-99	IT Corporation
Final Stabilization Treatability Study Report, SWMUs 10 / 11	1-Nov-99	IT Corporation
Final Chemical Quality Management Plan, SWMU 50, Interim Removal	5-Oct-99	Environmental Chemical Corp
Final Contractor Workplan, Quality Control Plan Site Safety and Health Plan Addendum, SWMU 50	5-Oct-99	Environmental Chemical Corp
Finding of Suitability for Early Transfer (FOSET) - SFAAP	1 Aug 99	US Army
Draft Off-Site Well Inventory Report	1-Aug-99	Burns and McDonnell
Geology, Hydrogeology and Groundwater Quality Study	24 Jun 99	Burns and McDonnell
Final Focused Corrective Measures Study Work Plan SWMU 50	1-Jun-99	Burns and McDonnell
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 12	1-May-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 2	1-May-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 27	1-May-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 31	1-May-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 47	1-May-99	Law

Previous Studies

Title	Date	Author
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 48	1-May-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 6	1-May-99	Law
Dioxin Background Study Report	9 Apr 99	EPA/TetraTech
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 13	1-Apr-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 36	1-Apr-99	Law
RCRA Facility Investigation and Final Quality Control Summary Report Addendum - SWMUs 4 and 5	1 Mar 99	Law Environmental, Inc.
Work Plan for Supplemental RCRA Facility Investigation for SWMUs 14 and 21	1 Mar 99	Burns and McDonnell
Decision Logic Criteria for Environmental Stabilization Plan (ESP) Burns - Buildings with Asbestos-Containing Materials (ACM) - 1999	1 Mar 99	Alliant Tech Systems
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 24	1-Mar-99	Law
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 3	1-Mar-99	Law
SFAAP Installation Action Plan - 1999	1 Mar 99	KC Dist, Corps of Eng
Environmental Assessment Re GSA Disposal of SFAAP	1 Feb 99	For GSA by Louis Berger & Assoc and Dames & Moore
Final Corrective Measures Study - SWMUs 10/11 and 22/32	1 Feb 99	Burns and McDonnell
Final RCRA Facility Investigation Report and Final Quality Control Summary Report and Addendum - SWMU 1	1-Feb-99	Law
Final Work Plan for the Additional Investigation Activities at SWMUs 33, 34, and 35	1-Dec-98	Burns and McDonnell
Hazardous and Medical Waste Study No. 37-EF-9063-99, Relative Risk Site Evaluation - SWMUs 53 and 54	5-Nov-98	U.S. Army Center for Health Promotion and Preventive Medicine
Greenhouse Study - Phytoextraction of Lead from Contaminated Soils at SFAAP	1 Aug 98	For Army Env Center by Tennessee Valley Authority
Final - Ecological Risk Assessment, RCRA Facility Investigation, Volume 1 - Text; Volume II - Tables/Figures; Volume III - Appendices	1-Aug-98	Law
Final - Quality Control Summary Report, Ecological Risk Assessment	1-Aug-98	Law
Sunflower Army Ammunition Plant, Kansas, Environmental Baseline Survey Report	1-Aug-98	Aguirre Engineers, Inc.
Real Property Listings	1-Jun-98	Alliant Tech Systems
Toxic Chemical Release Inventory	20-May-98	Alliant Tech Systems
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Quality Assurance Project Plan for the Closure of SWMU 23 - New Explosive Waste Burning Ground.	29-Apr-98	MKM Engineers, Inc.
Environmental Baseline Survey - Oz Entertainment Company	14 Apr 98	Hercules
Preliminary Highest and Best Use Analysis - SFAAP	11 Mar 98	For GSA by Daniel W. Craig and Daniel J. Collins
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Asbestos Location and OSHA Asbestos Compliance Plan, Koch Sulfur Products Company	1-Dec-97	Dalrymple Environmental, Inc.
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Temporary Operating Procedure No. 118, Clean Up of Environmentally Stabilized Areas, Revision 1	22-Oct-97	Alliant Tech Systems
Interim Measures Implementation Report for SWMU 50 - Debris Removal and Stream Bank Stabilization (Final)	1 Oct 97	Bay West, Inc.
Closure/Post Closure Guidance for RCRA Open Burning and Open Detonation Units	1-Sep-97	Brown and Root Environmental
Toxic Chemical Release Inventory	23-Jun-97	Alliant Tech Systems
Final RCRA Facility Investigation Report and Final Quality Control Summary Report Addendum - SWMUs 18 and 19	1-Jun-97	Law
Final RFI Report Addendum and QUALITY CONTROL SUMMARY REPORT - SWMU 51	1-Jun-97	Burns and McDonnell
Geology, Hydrogeology and Groundwater Quality Study (Draft)	1 May 97	Burns and McDonnell
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Environmental Compliance Audit of SFAAP (25-29 March 1996)	22 Apr 97	US Army
SFAAP, First Non-Time Critical Burn, 13 February 1997, Aerial Plume Emissions Measurement Report	15-Apr-97	Envirovisions, Inc.
RCRA Facility Investigation Report and Quality Control Summary Report Addendum for SWMU 14	1 Apr 97	Law Environmental, Inc.
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RCRA Facility Investigation Report and Quality Control Summary Report Addendum for SWMUs 10 and 11	1 Mar 97	Law Environmental, Inc.
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SFAAP Installation Plan - 1997	1 Feb 97	KC Dist, Corps of Eng
RCRA Facility Investigation Report for SFAAP - General (Final)	1 Feb 97	Law Environmental, Inc.
Final RCRA Facility Investigation Report and Final Quality Control Summary Report Addendum - SWMUs 50	1-Feb-97	Law
Community Relations Plan and Community Relations Plan Addendum for the Non-Time Critical Removal Action of Explosives-Contaminated Buildings, SFAAP	27-Jan-97	Burns and McDonnell
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Background Investigation Report and Quality Control Summary Report Addendum for Ecological Risk Assessment, Surface Water/Sediment Sampling and De Soto Park Sampling	1 Nov 96	Law Environmental, Inc.

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Final Background Investigation Report and Quality Control Summary Report Addendum	1-Nov-96	Law
Pest Management Survey/Hantavirus Survey # 16-RF-5596, SFAAP, 26-30 Aug 96	29 Oct 96	USACHPPM Direct Spt Activity West, Fitzsimons Garrison
Ecological Risk Assessment Work Plan - RCRA Facility Investigation Report for SFAAP (Draft)	1 Oct 96	Burns and McDonnell
Grazing Study Quality Control Summary Report for SFAAP (Draft)	1 Oct 96	Burns and McDonnell
Grazing Study Report for SFAAP (Draft)	1 Oct 96	Burns and McDonnell
Site Safety and Health Plan for the Small Project Indefinite Delivery Type Contract (SPIDT) - SWMU 50	1 Oct 96	Bay West, Inc.
Sunflower AAP Cultural Resources Management Plan	1-Sep-96	Geo-Marine Inc
Groundwater Study Work Plan (Final)	1 Aug 96	Burns and McDonnell
Groundwater Study Workplan	1-Aug-96	Burns and McDonnell
Risk Analysis and Environmental Stabilization Plan for Excess Personal Property (SFAAP)	29 Jul 96	Plexus Scientific
Toxic Chemical Release Inventory - Magnetic Media Submission	8-Jul-96	Alliant Tech Systems
Layaway of Industrial Facilities (LIF) Project 5968612 - Disposal of Polychlorinated Biphenyl Contaminated Transformers SFAAP	29-May-96	US Army
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Ecological Risk Assessment Quality Control Summary Report for SFAAP (Draft)	1 May 96	Law
Groundwater Study Work Plan (Draft)	1 May 96	Burns and McDonnell
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Receiving Water Biological Study No. 32-24-1174-94, Environmental Sampling of Robert's Lake, SFAAP	11-Mar-96	U.S. Army Environmental Hygiene Agency
RCRA Facility Investigation Addenda for SWMUs 15, 20, 40, 43 and 44	1 Mar 96	Burns and McDonnell
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General Investigative Reports for SFAAP	1995	KC Dist, Corps of Eng
ATSDR Site Summary of SFAAP	1 Dec 95	ATSDR
Ecological Risk Assessment	8 Nov 95	Law Environmental, Inc.
Annual Report - Army Radon Reduction Program Implementation Progress.	31-Oct-95	Hercules Aerospace Company Ordnance Group
RCRA General RCRA Facility Investigation Quality Control Summary Report for SFAAP (Volume II)	1 Oct 95	Law Environmental, Inc.
RCRA Facility Investigation Quality Assurance Project Plan Addendum (Draft)	1 Sep 95	Law Environmental, Inc.
Final Report - Benthic Macroinvertebrate Survey, RCRA Facility Investigation	1-Sep-95	Law
Investigation Derived Waste Management (IDW) Workplan	1-Sep-95	Law
RCRA General RCRA Facility Investigation Quality Control Summary Report for SFAAP (Volume I)	1 Aug 95	Law Environmental, Inc.
Draft Final - Ecological Risk Assessment Work Plan, RCRA Facility Investigation	1-Jul-95	Law
Draft Final Contamination Evaluation Report for the Water Line Construction Corridor, SFAAP	1-Jun-95	Law Environmental, Inc.

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RCRA Facility Investigation Addendum for Priority 2 SWMUs	1 May 95	Burns and McDonnell
Spill Prevention Control and Countermeasures Plan	1-Mar-95	Schrader, John, W.
Regarding the Supplemental Agreement No. 1 to Lease for Koch Sulfur Products Company	14-Feb-95	Hollman, Patricia A.
SFAAP Installation Action Plan - 1995	1 Feb 95	KC Dist, Corps of Eng
Sub-surface Investigation of Proposed Lease Property	25-Jan-95	Koch Sulfur Products
Commander's Personal Environmental Assessment for SFAAP	12 Jan 95	US Army
Initial Public Health Assessment	1-Jan-95	U.S. Department of Health and Human Services, ATSDR
Revised Final Background Investigation Workplan	1-Jan-95	Law
Roberts Lake Receiving Water Biological Study - Environmental Sampling	12-15 Sep 94	US Army Environmental Hygiene Agency
General Operating Procedure - Asbestos Materials Handling/Disposal	6 Jun 94	Hercules
Final Field Sampling Plan - RCRA Facility Investigation	1-May-94	Law
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Analytical Data from Kansas University Medical Center Landfill Upgradient Monitoring Wells	15 Mar 94	Univ of Kansas Medical Center Safety Office
SFAAP Installation Action Plan - 1994	1 Feb 94	KC Dist, Corps of Eng
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Environmental Assessment for SFAAP Operations and Maintenance Activities	3 Jan 94	Hercules
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Memorandum from J.C. Betteken, regarding the Depainting Sand Debris Found Non-Hazardous	5-Aug-93	Hercules Aerospace Company Ordnance Group
Groundwater Quality Consultation- Nitroguanidine Production	2-5 Aug 93	US Army Environmental Hygiene Agency
Preliminary Assessment of Record of Environmental Consideration for Corridor 10 Commerce Park to Connect to Government Rail Line	27 May 93	Hercules
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RCRA Preliminary Review/Visual Site Investigation Report, SFAAP	1-Sep-90	PRC Environmental Management Inc.
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Remedial Investigation Report fro SFAAP	29-Sep-89	Dames and Moore
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Asbestos Survey at SFAAP	1988	Foster-Wheeler
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Evaluation of the Adequacy of Existing Non-Discharging Lagoons for Current and Long-Term Uses, Sunflower AAP, September 1986, revised June, 1987.	1-Jun-87	U.S. Department of the Army
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Archaeological Overview and Management Plan for SFAAP, Johnson County, KS	14 Jan 85	For Army and National Parks Service, US Dept of Interior by Nickens and Assoc
Exposure Information Report Powerhouse Industrial Waste Treatment Lagoon, USAEHA Project No. 37-26-1342-86.	1-Jan-85	U.S. Army Environmental Hygiene Agency
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Hazardous Waste Management Survey No. 39-26-0131-82, Sunflower AAP, 18-21 November 1980.	18-Nov-80	U.S. Army Environmental Hygiene Agency
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Water Management Study of the Nitroguanidine Production Facility - SFAAP	1 Jul 79	Aberdeen Proving Ground, MD
Environmental Impact Assessment Statement (Revised)	27 Jun 79	Hercules
Army Pollution Abatement Program Feasibility Study for Acid Waste Treatment Area, SFAAP	1 May 79	Clark-Dietz Eng, Inc.
Environmental Impact Assessment Statement (Revised)	21 Dec 78	Hercules
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Source Sampling Data Summary Report, Study No. 21-0416-77, April 1977.	1-Apr-77	U.S. Army Environmental Hygiene Agency
Pollution Status Report - SFAAP	1 Jan 77	Picatinny Arsenal, NJ
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Water Quality Monitoring, Consultation No. 24-044-74/75, Sunflower AAP, 11-15 February 1974	11-Feb-74	U.S. Army Environmental Hygiene Agency

CLASSIFICATION YARD
SAAP-001

SITE DESCRIPTION

The Classification Yard is comprised of ~64 acres along the railroad yard in the northeastern portion of SFAAP. Incoming raw materials were sorted in this area for diversion to the appropriate receiving facility within SFAAP. The area operated from 1942-1991. Rail operations in the area stopped in 2001.

This area produced no hazardous wastes; however, as a result of handling incoming raw materials which may be classified as hazardous, the area had the potential for contamination. Although no spills were reported, the Classification Yard was identified as an area of potential contamination in the 1980 Installation Assessment because of the materials handled and the length of time the area has been in use. A RFI was submitted and indicated no contamination above industrial land use standards. AOCs 18-21, as identified in the 1993 EPA photographic study, were added to this site.

KDHE requested additional groundwater data downgradient of this site. Surface soil sampling was conducted at the bare spots and other locations to characterize the areas.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Solvents, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI
CURRENT IRP PHASE:
IRA
FUTURE IRP PHASE:
RC

Approximatly 2,000 cy of contaminated soil will be removed and disposed of off-site. Confirmatory samples will be taken and a closure report will be completed (funded in FY04).

The soil removal from AOC 18 was funded under SAAP-001.

PROPOSED PLAN

Finalize the no further action closure report.

RIVER WATER TREATMENT PLANT LAGOONS
SAAP-002

SITE DESCRIPTION

The River Water Treatment Plant (RWTP) (~19 acres), located in the northern portion of SFAAP near the Kansas River, was constructed and started operations in 1943. Water from the Kansas River was treated by lime addition, sedimentation, carbon filtration and chlorination. Sludge from the RWTP was partially used to construct two unlined lagoons south of the plant (upper lagoon 1,269,000 ft^3, lower lagoon 1,952,000 ft^3). Wastes from the RWTP were collected in the lagoons (USAEHA, 1978). Water treatment operations at the RWTP ceased in 1971, thus eliminating the effluent of sludge from the RWTP into the lagoons. In the late 1970s, because of the start up of NQ production, the lagoons received about 200,000 gallons per day of discharge from the NQ Area. This included wastewater from tank T784 (SWMU 44) which stored noncontact cooling water, steam condensate, cooling tower blowdown, and ammonia stripper discharge from the NQ production process. The RWTP was leased to a private firm for commercial aquaculture purposes (terminated in Sep 2001).

Both lagoons support a variety of aquatic life. Beaver, muskrat, turtles, sunfish and bass, along with aquatic vascular plants and summer algal blooms are commonly observed.

STATUS

RRSE RATING:
Medium

CONTAMINANTS:
Metals

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RFI, CMS, CMD, CMI

Initial RFI results indicated the need for additional GW and sediment sampling. Additional RFI data indicated elevated levels of arsenic in deep subsurface soils and the bedrock interface.

PROPOSED PLAN

Remove accumulated sludge and backfill/regrade. Revise risk assessment to incorporate arsenic-related concerns. This site will be included in an installation-wide stream study. Long-term monitoring and pond closure report will follow.

MAIN SEWAGE TREATMENT PLANT DRYING BEDS, SAAP-003

SITE DESCRIPTION

The main Sewage Treatment Plant (STP) is located on ~10 acres in the northeastern portion of SFAAP. Operations began in 1943 and continue. The plant treats sanitary wastewater from the installation. Following treatment, water from the plant is discharged into Kill Creek. During the 1950s and 1960s, solids (sludge) from the STP were placed in drying beds east of the Imhoff tank. The digester was last emptied in 1974. Wastewater from various production facilities and laboratories, including a photographic laboratory, processed at the plant may have contained hazardous constituents. According to a 1974 report, no chlorination was provided.

This site consists of the drying beds east of the Imhoff Tank. No significant contamination was found during the initial RFI activities; however, further soil investigation is warranted to fully delineate the site.

The RI will be completed in FY04.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Pesticides, Metals

MEDIA OF CONCERN:
Sediment, Soil

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
RFI (funded), CMD

FUTURE IRP PHASE:
CMI

PROPOSED PLAN

Sediment removal (~500 cy) with on-site disposal may be needed.

POND A AND SLUDGE DISPOSAL AREA
SAAP-004

SITE DESCRIPTION

Pond A (~2.5 acres) is an unlined pond located in the north central portion of SFAAP encompassing ~86,200 ft^2. Pond A was constructed in the 1940s and received wastewater from NC production during periods 1943-1960 and 1965-1971, and water discharged from the NQ Pilot Plant from 1980-1984. Pond A was used for the sedimentation of solids and equalization of wastewater from the NC area prior to lime treatment and subsequent discharge to Pond B (SWMU 6). In addition, Pond A received wastes from many other areas of SFAAP, including the NQ Pilot Plant. The pond now functions as part of the natural drainage system receiving storm sewer outfall from various parts of SFAAP, including drainage from the Industrial Wastewater Treatment Facility Area.

An unknown quantity of sludge dredged from Pond A was landfilled at the Sludge Disposal Area, located north of, and adjacent to, the pond. There is a potential safety hazard due to elevated nitrocellulose concentrations in the sludge. Two "zero-gap" tests performed on samples from the sludge disposal area were negative; however, the samples were not collected from areas with elevated nitrocellulose concentrations.

Initial RFI (March 2000) results indicated elevated levels of nitrocellulose.

All underground piping that is associated with the neutralization basin will be handled under SAAP-005.

Explosive safety considerations will complicate remedial actions at this site.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Nitrocellulose, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Install bedrock well to ensure no contamination has reached a lower aquifer. Investigate sediment and surface water contamination in ditch between Ponds A and B. Approximately 4,000 cy of soil may be removed. A pond closure plan will be developed and the pond will be closed. LTM is not anticipated due to insolubility of NC.

ACID SEWAGE DISPOSAL PLANT
SAAP-005

SITE DESCRIPTION

The Acid Sewage Disposal Plant is located on ~1 acre on the southeast edge of Pond A. It was constructed in 1943 to treat the acidic wastewater flowing into Pond A from the NC area and had two periods of operation: 1943-1960 and 1965-1971. The pH of Pond A effluent was adjusted in the neutralization unit before draining into Pond B (SWMU 6). Neutralized wastes and unsettled flocculent were discharged to an open drainage ditch leading to Pond B. During a visual inspection in 1990, a white sludge identified as "pebble lime" was piled up along the southeast edge of the plant.

Initial RFI data indicates elevated levels of nitrocellulose in soil.

The underground piping and the initial portion of the connecting ditch to Pond B will be remediated under this site.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Nitrocellulose, Metals
MEDIA OF CONCERN:
Soil, Sediment
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Further investigation (neutralization basins) and a Corrective Measures Study will be completed. Approximately 5,000 cy of soil will be removed.

POND B AND SLUDGE DISPOSAL AREA
SAAP-006

SITE DESCRIPTION

SAAP-006 (~38 acres) is located in the east-central portion of SFAAP, downstream of Pond A. Pond B is an unlined impoundment situated upon limestone bedrock with a surface area of ~9 acres and a capacity of ~2.2 million ft^3 (16.5 million gal). The pond was constructed in the 1940s for sedimentation of solids from the neutralized wastewater discharged from the Pond A Neutralization Unit (SWMU 5). Unknown quantities of sludge were occasionally dredged from pond B and landfilled west of the pond. Pond B discharges into Kill Creek.

The pond supports a variety of aquatic life. Large fish were observed in the pond during a site visit in 2002.

Initial RFI results indicated elevated levels of NG and manganese in groundwater.

STATUS

RRSE RATING: Medium

CONTAMINANTS:

Solvents, Metals, Nitrocellulose, Nitroglycerin

MEDIA OF CONCERN: Soil, Groundwater, Sediment, Surface Water

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RFI, CMD, CMI

PROPOSED PLAN

Drain and dredge the pond. Stabilize and dispose of sludge from the pond and associated disposal areas as special waste.

Additional investigation, including installing monitoring wells, is planned. Approximately 42,000 cy of soil will be removed, treated and disposed of on-site. A pond closure plan will be developed.

If off-site disposal is required, remedial action costs will increase substantially.

Long-term monitoring will be conducted under SAAP-013 (OU 2).

NORTH ACID AREA - CHROMATE AREA
SAAP-007

SITE DESCRIPTION

The North Acid Area is located in the north-central portion of SFAAP. The North Acid Area manufactured ammonium nitrate liquor from 1947 to 1948 and was dismantled in 1958. The North Acid Area contains 3 SWMUs: the Chromate Area (SAAP-007), the Chromate Concentration Pond (SAAP-008) and the Wastewater Treatment Lagoon (SAAP-009).

The Chromate Area consists of ~0.5 acre within the North Acid Area. The Chromate Area is the location of the former cooling water treatment unit, including a cooling tower in which chromium-contaminated wastewater was reportedly generated through the use of corrosion inhibitors on the tower. Chromate liquid may have been disposed of in pipes subsequently left buried in the area and the potential is present for heavy metal contamination. When the site was dismantled in 1958, the 2 wastewater collection basins were left in place. In 1982 and 1983, chromium-contaminated water was removed from the basins. Water continues to accumulate in the basins.

A geophysical survey was conducted and several subsurface anomalies were identified, potentially indicating buried process pipelines. Initial RFI activities indicate the need for additional soil and surface water delineation due to heavy metal and PAH contamination.

Initial sample data was found to be unreliable; therefore the site must be resampled.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals, PAHs

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
RFI

FUTURE IRP PHASE:
CMD, CMI, LTM

PROPOSED PLAN

Additional RFI activities will be performed to complete nature and extent determination and to confirm source areas. Approximately 7,200 gal of liquid waste will be removed and disposed of off-site as hazwaste. The removal action will include excavation of debris (subsurface anomalies). Approximately 550 cy of soil will be excavated and treated on-site. Any existing surface water in the basins will be removed. Five years of LTM will be conducted.

NORTH ACID AREA - CHROMATE CONCENTRATION POND, SAAP-008

SITE DESCRIPTION

The North Acid Area is located in the north-central portion of SFAAP. The North Acid Area manufactured ammonium nitrate liquor from 1947 to 1948 and was dismantled in 1958. The North Acid Area contains 3 SWMUs: the Chromate Area (SAAP-007), the Chromate Concentration Pond (SAAP-008) and the Wastewater Treatment Lagoon (SAAP-009).

The Chromate Concentration Pond is known to have been located within the North Acid Area, but because the pond has been drained, its location remains uncertain. Reportedly, chromate was used as a corrosion inhibitor on the cooling towers at the Nitrogen Fixation Plant.

Chromate salts from the neutralization process used to treat chromium sludge were reportedly stored in drums located in the magazine area. These salts proved non-hazardous and SFAAP received state approval to dispose of the salts in an on-site landfill.

The risk assessment found that the primary risk drivers were hexavalent chromium in surface water and PAHs in surface soil.

Initial sample data was found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals, PAHs

MEDIA OF CONCERN:
Surface Water, Soil, Groundwater

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
RFI

FUTURE IRP PHASE:
CMD, CMI, LTM

PROPOSED PLAN

Additional RFI activities will be performed. Approximately 7,200 gal of liquid waste will be removed and disposed of off-site as hazwaste. Approximately 550 cy of soil will be excavated and treated on-site. Five years of LTM will be conducted.

NORTH ACID AREA - WASTEWATER TREATMENT LAGOON, SAAP-009

SITE DESCRIPTION

The North Acid Area is located in the north-central portion of SFAAP. The North Acid Area manufactured ammonium nitrate liquor from 1947 to 1948 and was dismantled in 1958. The North Acid Area contains 3 SWMUs: the Chromate Area (SAAP-007), the Chromate Concentration Pond (SAAP-008) and the Wastewater Treatment Lagoon (SAAP-009).

Wastewater treatment practices for the North Acid Area were not documented. It is believed the processes practiced were similar to the traditional wastewater treatment operations practiced in the South Acid Area. This treatment involved lime addition to the wastewater, followed by discharge to a holding pond or lagoon.

The South Acid Area produced calcium sulfate sludges. Similar sludges are believed to have been produced in the North Acid Area. In addition, there is a possibility that chromate-contaminated water may have been released as waste to this lagoon.

The risk assessment found that primary risk drivers were hexavalent chromium in surface water and PAHs in surface soil.

Initial sample data was found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals, PAHs

MEDIA OF CONCERN:
Surface Water, Soil, Groundwater

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
RFI

FUTURE IRP PHASE:
CMD, CMI, LTM

PROPOSED PLAN

Additional RFI activities will be performed. Approximately 7,200 gal of liquid waste will be removed and disposed of off-site as hazwaste. Approximately 550 cy of soil will be excavated and treated on-site. Five years of LTM will be conducted.

F-LINE AREA DITCHES
SAAP-010

SITE DESCRIPTION

The F-Line Area is located in the east-central portion of SFAAP. This site consisted of sumps, troughs, pipes and other conveyances and ditches used for the management of wastewater from operations in the F-Line Area. F-Line included a blender house where explosive propellant was received and blended with lead salicylate; rolled into sheets; slit and wound into carpet rolls; and extruded by large hydraulic presses into solid propellant grains. Any propellant that was on the floor was washed into the drain with the wastewater. Most of the effluents were then discharged, via unlined ditches, to settling ponds and eventually to Spoon and Kill Creeks; however, one group of the ditches discharged directly to a field adjacent to Spoon Creek. The F-line ditches were located on the east side of the F-Line press houses. Occasionally, propellant solids settled in these ditches before reaching the ponds. The ditches were used periodically from the early 1950s to 1971. Several ditches served as discharge points for runoff from storm drains along the streets in the area.

STATUS

RRSE RATING:

High

CONTAMINANTS: Metals, Solvents, Ordnance Compounds

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA, RFA, RFI

CURRENT IRP PHASE:

CMD, CMI

FUTURE IRP PHASE:

RC

The draft RFI indicates nitroglycerin in soil at concentrations that exceed EPA's target risk range for carcinogenic risk. Lead was found at concentrations exceeding EPA and KDHE guidance values. The Statement of Basis has been completed and recommended soil remediation by excavation, stabilization and disposal. A surface soil (~24,000 cy) removal was completed in 2001. In 2001, the size of this site was expanded by ~25 acres to a total area of ~128 acres and includes 56 additional building foundations. Approximately 10 acres around the building foundations will require additional investigation.

AOC-6 is being handled under this site.

PROPOSED PLAN

Complete site investigation of 10 additional acres of the site (funded in FY04). Additional soil removal is expected (~16,000 cy). Long-term monitoring will be funded under SAAP-013 (OU 2).

F-LINE AREA SETTLING PONDS
SAAP-011

SITE DESCRIPTION

The F-Line Area (~5 acres total) is located in the east central portion of SFAAP. Wastewater from the F-Line production facilities drained into ditches, which, for the most part, led to the six F-Line Area Settling Ponds (1A, 1B, 2A, 2B, 3A, and 3B) and two Blender Ponds (4A and 4B). The six Settling Ponds were unlined earthen ponds equipped with stand pipes to permit settling of solids and decantation of water. The northernmost Settling Ponds (3A and 3B) were constructed in 1943 and abandoned in 1971. The remaining ponds were operational from 1943 to 1969. These ponds were used to settle propellant solids from wastewater generated during production of propellants. The ponds were also part of the natural drainage system, ultimately discharging into Spoon and Kill Creeks. During past operations, SFAAP occasionally removed the propellant solids which had accumulated in the ponds and burned them at the burning grounds. The pond sediments were contaminated with uncolloided propellant with lead salts, phthalates and NC from the manufacturing process.

STATUS

RRSE RATING:

High

CONTAMINANTS:

Metals, Ordnance Compounds

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:

PA, RFA, RFI, CMD, CMI

CURRENT IRP PHASE:

RC

The RFI indicated nitroglycerine in soil at concentrations that exceed EPA's target risk range for carcinogenic risk. Lead was also found at concentrations exceeding EPA and KDHE guidance values. A surface soil (4,500 cy) removal was completed in 2001.

The long-term monitoring will be funded under SAAP-013 (OU 2).

PYOTTS POND AND SLUDGE DISPOSAL AREA SAAP-012

SITE DESCRIPTION

Pyotts Pond and Sludge Disposal Area (~12 acres) is located in the east-central portion of SFAAP. Pyotts Pond is an unlined, earthen impoundment with a surface area of ~1.7 acres and a capacity of ~697,000 ft^3 /5.2 million gal. The pond was constructed in 1968 to aide in pollution control. In the past it has received drainage from the South Acid Area, the F-Line Paste Area, the NC Area, the Solvent Area and the NG Area, as well as non-contact cooling water, boiler blowdown and some process water from the South Acid Area. Neutralization of water entering the pond resulted in an accumulation of calcium sulfate sludge, which was periodically dredged and landfilled adjacent to the pond to the north and south. The pond was used primarily for flow control and emergency containment for acid manufacturing. Effluent from the pond drains northeast to Kill Creek, and was monitored by NPDES Outfall 004. The pond supports an active aquatic ecosystem. PCBs were detected in two pond sediment samples.

STATUS

RRSE RATING:

Medium

CONTAMINANTS: Metals, Nitroguanidine, PAHs, Nitrocellulose

MEDIA OF CONCERN: Groundwater, Sediment, Surface Water, Soil

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RFI, CMD, CMI

Initial RFI results indicated elevated levels of mercury and nitroguanidine in the surface water. Groundwater contained nitroguanidine, and sediments contained elevated levels of PAHs and nitrocellulose.

PROPOSED PLAN

Additional RFI activities will be performed to fully define the extent of contamination to characterize the sludge in the pond. A risk assessment revision will require additional surface water and groundwater sampling. A pond closure plan will be developed and the pond will be closed. Approximately 7,000 cy of sediment and soil will be removed, treated and disposed of on-site.

Long-term monitoring will be funded under SAAP-013 (OU 2).

If off-site disposal is required, remedial action costs will increase substantially.

SOUTH ACID AREA LWTP EVAPORATIVE LAGOONS SAAP-013

SITE DESCRIPTION

The South Acid Area LWTP Evaporative Lagoons (32 acres) are located in the east-central portion of SFAAP. The Liquid Waste Treatment Plant (LWTP) consists of 5 aboveground tanks: 3 for treating wastewater, 1 for slurrying lime, and 1 for feeding wastewater to be treated. In addition, there were 4 unlined, earthen cells used as Evaporative Lagoons associated with the LWTP. Use of the LWTP and lagoons began in 1979. Volumes of waste treated at the LWTP varied with the need of production operations. The plant treated up to 1.5 million gallons of corrosive wastewater each month. In the summer of 1986, the lagoons were reportedly nearing their effective capacity, and the wastewater from the lagoons was being applied to land within the plant boundaries. Land application of wastewater had been performed in many areas of SFAAP, including the open areas in the western and southern portions of the NQ production area.

In a letter dated March 11, 1996, KDHE approved a schedule of work for remediation of the lagoon sludge and dismantlement of the lagoons. This action partially fulfilled KDHE requirements for lagoon closure. This work was completed in August 1999

STATUS

RRSE RATING:
Low

CONTAMINANTS:
Metals, Nitrates

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA, RFA, CMI, CMI(O)

CURRENT IRP PHASE:
RIP (1999) with LTM

FUTURE IRP PHASE:
RIP (1999) with LTM

PROPOSED PLAN

Additional requirements to complete closure of the lagoons include groundwater monitoring at selected sites downgradient of the lagoons for a period of not less than five years, and submittal of a final work plan for closure activities consistent with KDHE's pond closure/sampling verification plan. The Army is currently determining the lateral extent of the plume of OU 2 (SAAP-006, 010, 011, 012, 013, 039, 040, 067). Source removal for OU 2 is complete at SAAP-011 and 013 and will be completed at the rest of the sites.

Groundwater monitoring for all of OU 2 will be funded under this site.

ROCKET STATIC TEST AREA
SAAP-014

SITE DESCRIPTION

The Static Rocket Test Area is located in the east-central portion of SFAAP. It encompasses ~7 acres in the northeastern portion of the Proving Ground area. The site includes 4 firing platforms. Two outdoor firing platforms are located immediately north of each of the two Proving Ground buildings.

The Proving Ground was used to conduct proof and surveillance tests of manufactured powder and propellants common to cannon and rocket artillery. Tests were conducted between 1965 and 1971.

Phase I and II RFI sampling indicated lead, nitroglycerine, propellants, and phthalates in surface soil above action levels. Lead and nitroglycerine were found in the groundwater above action levels.

STATUS

RRSE RATING:

High

CONTAMINANTS: Metals, Nitroglycerine, Propellants

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

RFI (funded)

FUTURE IRP PHASE:

CMD, CMI, LTM

PROPOSED PLAN

Complete sediment and surface water sampling (funded in FY04).

Remedial activities will consist of soil excavation, treatment and on-site disposal of ~188 cy of soil. LTM will be conducted.

WASTE STORAGE MAGAZINES
SAAP-015

SITE DESCRIPTION

The Waste Storage Magazines (57 acres) are located in the southeast portion of SFAAP, and are also known as the J-Magazine Area Buildings. The buildings included in this SWMU are J-117, J-118, J-119, J-120, J-121, J-122, J-124, J-127, and J-128. All magazines used natural lighting to preclude accidental detonation of explosives, are secured with locking doors, and have concrete floors with secondary containment. Materials designated to be stored in each magazine included production waste from propellant manufacturing, spent solvents, and other explosive and hazardous waste.

During a site inspection in 1990, rust colored stains were noted on the concrete loading pad at J-127.

Initial sample data was found to be unreliable; therefore the site must be resampled.

STATUS

RRSE RATING:

Medium

CONTAMINANTS:

Pesticide

MEDIA OF CONCERN:

Soil, Sediment, Surface Water, Groundwater

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RFI

PROPOSED PLAN

A RFI will be performed.

The site buildings are currently undergoing RCRA closure (Section I of the Part B Permit).

TEMPORARY WASTE STORAGE MAGAZINES
SAAP-016

SITE DESCRIPTION

Most of the Temporary Waste Storage Magazines (79 acres) are located in the southwest-central portion of SFAAP. This includes the B-Area Storage Buildings B-14, B-16, B-20, B-21 and B-22. Also included in this SWMU is Building 181-2 which is located in the central portion of SFAAP. Building 181-2 is an inactive 12 x 15 ft metal structure that was used to store spent degreasing solvents. The building has a concrete floor and is surrounded by an earthen dike. The solvents which were stored in 181-2 were transferred in 1984 to Building J-125, where temporary spill containment was provided. When the upgrading of J-124 was complete, the solvents were then transferred from J-125 to J-124. Over time, 181-2 contained ~550 gallons of spent degreasing solvents.

During a site visit in 1990, no signs of past releases were evident. It was noted, however, that the earthen dike for spill containment for building 181-2 was “inadequate.”

Initial sample data was found to be unreliable; therefore the site must be resampled.

STATUS

RRSE RATING:

Low

CONTAMINANTS:

Pesticides, Metals, Solvents

MEDIA OF CONCERN:

Soil, Sediment, Surface Water, Groundwater

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RFI

PROPOSED PLAN

A RFI will be performed.

The site buildings are currently undergoing RCRA closure (Section I of the Part B Permit).

G-LINE AREA DITCHES
SAAP-017

SITE DESCRIPTION

The G-Line Area Ditches (~284 acres) are located in the south-central portion of SFAAP. It was a solvent propellant area. No data were available about the period of operation for this area; however, it was reported that during the 1940s, the G-line NC wringers overflowed, and NC fines had been observed along drainage ditches from the area leading to Kill Creek. It is likely that G-Line Area ditches received the same types of materials and followed the same historical wastewater treatment practices as the F-Line Area. The G-Line area is situated close to the basin divide between flow westward to Captain Creek and flow eastward to Spoon and Kill Creeks. Consequently, it is possible for contamination to migrate in either direction depending on the location of the source of contamination in the G-Line area. In addition, it has been reported that NC spills occurred in the area, and NC wastes were observed in the ditches in the area. It is possible that small amounts of propellant solids containing lead salts may have settled in these ditches.

Initial sample data was found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:

Low

CONTAMINANTS:

Metals, Solvents, Nitrocellulose

MEDIA OF CONCERN: Groundwater, Soil, Surface Water, Sediment

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

None

FUTURE IRP PHASE:

RFI, CMD, CMI, LTM

PROPOSED PLAN

A RFI will be performed. A soil removal of ~11,000 cy may be required. This does not include excavation from areas around the buildings. Long-term monitoring is planned.

Soil will be stabilized and disposed of on-site.

If off-site disposal is required, remedial action costs will increase substantially.

OLD/NEW SANITARY LANDFILLS
SAAP-018

SITE DESCRIPTION

The entire Landfill Area encompasses ~50 acres located about 1 mile west of the NG Area near the central-western border of SFAAP. However, only 31 acres make up the Old/New Sanitary Landfills. The landfills employed a trench-type operation. Several types of landfills are included in the Landfill Area: the sanitary landfill (31 acres); the asbestos landfill (1 acre) and the ash landfill (19 acres, SAAP-019). This Landfill Area began operation in 1943. Prior to the designation of the New Sanitary Landfill in 1967, refuse of all types was buried at a site just south of the new landfill. No records from the Old Landfill were available. SFAAP no longer uses the New Sanitary Landfill; currently, waste is disposed off-site. Although there was no hazardous waste placed in either landfill, there is one area reported to have received containers of a lead compound east of the landfill, and 2 areas with known asbestos waste near the Sanitary Landfill.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Dioxins, Furans, Lead
MEDIA OF CONCERN:
Groundwater, Soil, Surface Water
COMPLETED IRP PHASE:
PA, RFA, IRA
CURRENT IRP PHASE:
RFI
FUTURE IRP PHASE:
CMD, CMI, LTM

The RFI report states that the primary concerns at SFAAP-018 and 019 are the constituents detected in groundwater (sulfide; cis-1,3-dichloropropene and ammonia nitrogen) and dioxins/furans in the shallow soil. Institutional controls have been implemented (fencing) to control site access. An IRA for erosion control was completed.

Shallow groundwater flowing through a sand lens within the site complicates remedial action.

PROPOSED PLAN

Additional RFI activities will be performed to delineate the extent of soil and groundwater contamination. Remedial action activities will include construction of a landfill cap to include capping and monitoring of SFAAP-049. A slurry wall or other feature will be constructed, to reduce groundwater flow through the site. LTM will be required.

Groundwater monitoring for OU 3 (SAAP-018, 019, 021, 022, 031, 032, 043, 049) will be funded under this site.

ASH LANDFILLS
SAAP-019

SITE DESCRIPTION

There are two, unlined ash landfills. SAAP-019 (~19 acres) is located north of the Sanitary Landfill, in the central-western portion of SFAAP. The area of SAAP-019 adjacent to SAAP-018 will be addressed under SAAP-018. The other landfill is located southeast of Power House #1 (~1 acre).

It has been reported that these landfills were used prior to 1966. The ash landfills contain unknown quantities of fly ash from the ash-sluice system and coal fines from the coal pile. Fly ash sometimes contains heavy metals.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Groundwater, Soil
COMPLETED IRP PHASE:
PA, RFA, RFI
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
IRA

PROPOSED PLAN

The area of SAAP-019 adjacent to SAAP-018 will be addressed under SAAP-018.

In the area southeast of Power House #1, ~1,000 cy of material will be excavated and disposed of on-site.

ASH LAGOONS AND SLUDGE DISPOSAL AREA
SAAP-020

SITE DESCRIPTION

The Ash Lagoons and Sludge Disposal Area are located on 15 acres in the north-central portion of SFAAP. There are four Ash Lagoons, all are 15 feet deep. Lagoon 165-1 is 103,600 ft^2, Lagoon 165-2 is 118,900 ft^2, Lagoon 165-3 is 95,000 ft^2, Lagoon 165-4 is 10,000 ft^2. These lagoons began operation in 1979 to collect fly ash and bottom ash from the boiler house (Power House #1) via an ash-sluice system. The ash wastes (which may contain heavy metals) were allowed to settle out in the lagoons and the slightly alkaline wastewater was filtered and recycled back to the boiler house. Lagoons 165-1, 165-2, and 165-3 were periodically dredged and the sludge was landfilled in the Ash Landfill (SWMU 19). The lagoons are located just south of Pond A; however, discharge most likely flowed in the direction of the topographic slope to Pond B, located 2,000 feet east of the lagoons. Reports from site visits in 1987 and 1990 both indicated that the embankments of the lagoons appeared to be in good condition. The lagoons are reportedly unlined; however, logs from a 1992 site visit indicated one lagoon appeared to have a liner. Unlined lagoons present a pathway for constituents to migrate into the groundwater.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RFI (funded), CMD
FUTURE IRP PHASE:
CMI, CMI(O), LTM

Initial RFI activities indicated no groundwater contamination; however, additional sampling of the lagoons will be required. Initial sample data was found to be unreliable, therefore the site must be resampled.

The Corrective Action Management Unit (CAMU) will accept appropriate material from other sites on the installation. The location is southeast of SAAP-023. The CAMU construction and operation will be funded under SAAP-020.

PROPOSED PLAN

The lagoons will be investigated, remove and dispose of ~12,130 cy of ash in the lagoons, and the lagoons will be closed. Prepare CAMU site to receive wastes from other Sunflower sites.

CONTAMINATED MATERIALS BURNING GROUND SAAP-021

SITE DESCRIPTION

The Contaminated Materials Burning Ground consists of ~10 acres located in the west central portion of SFAAP. The site was brought into operation in 1943 to decontaminate scrap metal (which is later salvaged) and to burn other combustible material that had been contaminated with explosives or propellants. Prior to 1970, burning of contaminated materials occurred in two open trenches. However, in about 1970, two unlined 30 x 300 ft pads were installed where the trenches were located. The pads were separated by an earthen berm. Contaminated material accumulated at the site until the pad was full, which generally took ~1-2 months. Burning was initiated using diesel fuel, waste oils, and scrap wood (including telephone poles). SFAAP randomly sampled the remainder of the residue for TCLP metals (leachable), and upon negative results disposed the ash in the sanitary landfill. After one pad was burned, the other pad began receiving materials for the next burn. During a site visit in 1990, burn areas were observed away from the main burn pads.

STATUS

RRSE RATING: High

CONTAMINANTS: Metals, Petroleum Hydrocarbons, Dioxins, Solvents, VOCs

MEDIA OF CONCERN:

Soil, Groundwater, Surface Water

COMPLETED IRP PHASE:

PA, RFA, RFI

CURRENT IRP PHASE:

CMD

FUTURE IRP PHASE:

CMI

Also located on the site is an open top tank, ~8 ft in diameter, which was used to burn waste solvent. Adjacent to the tank is an elevated platform which appeared to have been used as an unloading dock for liquids to be emptied into the tank. At the time of a 2001 site visit, the tank contained water.

Groundwater and surface water runoff from the burn area flow northwest to Captain Creek or the adjacent Oxbow Lake.

Phase I & II RFI results indicated the presence of dioxins, metals, solvents, and petroleum hydrocarbons in soil. Petroleum hydrocarbons and volatile organic compounds were detected in groundwater and surface water. Additional sampling was completed in spring 2003. An ex-situ bioremediation pilot test for TPH, VOC and PAHs in groundwater was conducted FY04. Approximately 5,000 cy of POL-contaminated soil was excavated and bioremediated in FY04. The CMS will be completed in FY04.

PROPOSED PLAN

Remedial action will consist of excavation and disposal of ~2,000 cy of wastes (Areas D, E and F). An additional 500 cy is anticipated from Area B. A cover may be placed over a portion of the site after hot spot soil removal.

Long-term monitoring will be funded under SAAP-018 (OU 3).

OLD EXPLOSIVE WASTE BURNING GROUND SAAP-022

SITE DESCRIPTION

The Old Explosive Waste Burning Ground (30 acres) is located north of the Contaminated Materials Burning Ground (SWMU 21) in the west central portion of SFAAP. In this area, waste explosives including NG slums (i.e., NG mixed with sawdust for stabilization) and various propellant formulations from the sumps, filters, and drains in the production areas were disposed by open burning on designated pads. The site was in operation from 1943 to 1980. SAAP-022 includes ~7 acres of 5 burning pads, and a NG slums burning area. During a Groundwater Contamination Survey in 1987, the USAEHA reported that the site was a grass covered field showing no signs of vegetative stress.

RFI and CMS activities are complete. Lead and NG were detected in surface soil above action levels.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals, Nitroglycerine

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA, RFA, RFI, CMD

CURRENT IRP PHASE:
CMI

FUTURE IRP PHASE:
RC

PROPOSED PLAN

The Army has initiated soil treatability testing from SWMUs containing similar wastes (metals and explosives) in an effort to develop a facility-wide technique for bulk soil remediation. Ex situ stabilization will be conducted to treat and dispose on-site ~4,400 cy of contaminated soil, in accordance with CMS recommendations (all funded in FY04).

One round of groundwater sampling will be conducted (funded in OU 3). LTM is not expected to be required.

NEW EXPLOSIVE WASTE BURNING GROUND SAAP-023

SITE DESCRIPTION

The New Explosive Waste Burning Ground (17 acres) has been in operation since 1980 when it replaced the Old Explosive Waste Burning Ground (SWMU 22). It is located in the southwest portion of SFAAP and consists of a diked earthen pad measuring 130 x 340 ft. A maximum of 5,000 lbs of explosives may be burned on this pad at one time, and smaller quantities may be detonated. Waste NQ, GN, explosives, and propellants of various formulation have been burned and/or detonated at this site.

Releases to the soil were reportedly evident, as indicated by stained soils observed at the time of a site visit conducted in 1990. This unit is currently listed on SFAAP's RCRA Part A Application; and the Subpart and Part B Application. Physical remediation is complete and the final report was submitted to the EPA and KDHE in 2000. Final clean closure acceptance by regulatory agencies was received in 2000.

No further action is needed at this site. The wells will be closed under SAAP-018.

STATUS

RRSE RATING:
Medium

CONTAMINANTS:
PAHs

MEDIA OF CONCERN:
Soil

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
RC - 1999

NITROGLYCERINE AND PASTE MIX AREA
SAAP-024

SITE DESCRIPTION

The NG and Paste Mix area (149 acres) is located in the central portion of SFAAP. NG manufacturing in this area began prior to the end of World War II and continued until 1971. Two operating lines provided nitrated glycerine for use in the paste area. There were several recorded instances where NG spilled onto the soil in the NG area. The amount of NG spilled ranged from 1-2 lbs to a 1,200 lbs spill in August of 1944. This site drains into Pyotts Pond. The buildings have been removed.

Field observations in 1985 indicated the main ditch contained between ten and fifteen inches of stagnant water, with grass present throughout most of the length.

Investigation activities identified 11 sumps as possible explosive hazards. The sumps have been fenced to limit access. Elevated levels of lead in soil and surface water were detected, probably resulting from drainage from the paste area.

STATUS

RRSE RATING:
High

CONTAMINANTS:
Metals, Solvents, NG

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RFI, CMD, CMI, LTM

This site also includes the piping from the 11 nitrator buildings to their respective sumps, and the areas immediately around the buildings, due to documented spills.

This site also includes potential residual contamination in the paste mixing area.

PROPOSED PLAN

Additional RFI investigations will be performed to fully define the extent of contamination around the paste mix buildings, nitrators, rest houses, and sumps. Remedial activities will include excavation, treatment (blending) and hauling ~15,000 cy of materials to an on-site disposal facility. An explosives safety submittal will be required to mitigate the energetic hazards associated with NG. The building sumps, drainpipes and ditch sumps will be sampled remotely and stabilized. An appropriate remedial action for the sumps will be determined. Five years of LTM will be conducted.

NITROCELLULOSE AREA DITCHES
SAAP-025

SITE DESCRIPTION

The NC Area Ditches (41,000 linear feet) are located in the north central portion of SFAAP. This site consists of the ditches leading from the NC Area to Pond A. NC is prepared by the reaction of cotton linters (cellulose) and a mixture of nitric and sulfuric acids. NC was produced during two periods, 1943 through 1960, and 1965 through 1971.

Nitrocelluose was detected in the ditch sediments during initial RFI activities.

Initial sample data was found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals, Nitrocellulose
MEDIA OF CONCERN:
Sediment, Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RFI
FUTURE IRP PHASE:
CMD, CMI, LTM

PROPOSED PLAN

Additional RFI activities will be performed to fully define the extent of contamination (partially funded in FY04). Remedial activities will include excavation, treatment and disposal of ~1,500 cy (2,500 linear feet of ditch soil) of contaminated sediment.

SINGLE BASE PROPELLANT AREA, WASTE WATER SETTLING SUMPS, SAAP-026

SITE DESCRIPTION

The Single Base Propellant Area (501 acres) consists of a series of buildings in the north-central portion of SFAAP. Single base propellant for small arms, cannon, and rockets was produced in this area during the periods of 1943-1948, 1951-1960, and 1965-1971. Solvents (acetone, alcohol) were used in the Single Base Propellant process. There were four different types of production buildings in this area numbered 1600, 1650, 1700 and 1725 series. There were wastewater sumps adjacent to each of the 1600 and 1650 series buildings, which were designed to settle out solids from the building's wastewater. Flow equalization tanks were located adjacent to each of the 1700 and 1725 series buildings. Each of these tanks was covered by an open wooden grate. Wastewater from the sumps and tanks was discharged to a collection sewer, which eventually discharged to open ditches. These ditches discharged west into Captain Creek. The three southeast buildings' wastewater drained east and eventually discharge into Pond A. At the time of the USAEHA study in 1985, all the sumps contained standing water, soil, and pieces of rotted wood from the baffles, all of which appeared to have partially decayed. The buildings in this area were undergoing removal via demolition and burning in 1990. At the time of the 1992 site visit, some of the buildings which fed the sumps had already been removed. Remediation will consist of soil removal from impacted areas outside the building foundations and drainage areas.

Initial samples were found to be unreliable, and therefore the site must be resampled.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals (Lead), SVOCs, Propellants
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI, LTM

PROPOSED PLAN

Additional RFI sampling activities will be performed to fully define the extent of contamination around building foundations and ditches. Visual inspections will be conducted in areas not sampled. Remedial activities will include excavation, treatment, and disposal of ~2,400 cy of contaminated soil around the building foundations. Confirmatory sampling for metals, phthalates, and NC will be conducted at 50-foot intervals in ditches and one sample per building sump.

NQ AREA SAC & LWTP EVAPORATIVE LAGOONS SAAP-027

SITE DESCRIPTION

The NQ LWTP Evaporative Lagoons Area (10 acres) are located in the northwest portion of SFAAP. The Sulfuric Acid Concentrator (SAC) Liquid Waste Treatment Plant (LWTP) went into operation in 1984. It consisted of a 45,000-gal tank for distillate and a 17,000-gal tank for other corrosives. It received corrosive distillate from the SAC and some corrosive wastewater from the NQ production processes. Lime neutralizers were added to the acidic wastewater, which then flowed into the two Evaporative Lagoons located south of the LWTP. The wastewater transfer line from the LWTP to the evaporative lagoons had documented releases. The lagoons were constructed in 1984. At the time of the 1987 investigation, the lining of the lagoons appeared damaged. Observations of higher soil moisture and occasional small amounts of water at the base of the berm on the west side of the southern lagoon indicated releases were occurring. The lining was replaced. It was reported that when the liner was replaced in one of the lagoons, the breaks in the old liner indicated that release to the underlying soil did occur.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Corrosives, Metals, NQ, GN
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI, IRA
CURRENT IRP PHASE:
RC - 1999

In 1996, the lagoons were remediated and dismantled under an agreement with KDHE, constituting partial fulfillment of requirements for lagoon closure. The lagoons have been capped and final grading and seeding was designed for minimal surface water infiltration and erosion. Confirmation soil samples were collected in FY02 along the LWTP transfer line.

Groundwater monitoring will be funded under SAAP-045 (OU 1).

WASTE CALCIUM CARBIDE TREATMENT AREA SAAP-028

SITE DESCRIPTION

This site is a state regulated unit and was closed outside of the ER,A program.

No further action is planned under the IRP.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS:
N/A
MEDIA OF CONCERN:
N/A
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RC - 1980

INDUSTRIAL WASTEWATER LAGOONS
SAAP-029

SITE DESCRIPTION

This site is a state regulated unit and was closed outside of the ER,A program.

No further action is planned under the IRP.

STATUS

RRSE RATING:
Not Evaluated
CONTAMINANTS:
N/A
MEDIA OF CONCERN:
N/A
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RC - 1980

PESTICIDE HANDLING AREA
SAAP-030

SITE DESCRIPTION

The Pesticide Handling Area (20 acres) is located in the north central portion of SFAAP, with a new building erected a short distance from the old structure that it replaced. The old facility and its surrounding area were reportedly cleaned of pesticide residues. The new facility met USAEHA's *Criteria for Design of a Pest Control Shop, Pesticide Storage and Mixing Facility*. It has been in operation since 1984. The facility contains four sumps, one in each area: the pesticide storage room, the herbicide storage room, the inside mixing room and the outside mixing area. Reportedly all liquid within the sumps is recycled into formulations, and there is no discharge from the sumps. No spills or releases have been recorded for this site.

During a Preliminary Review site visit to the Pesticide Handling Area in 1990, an aqua-blue stain was evident at the outside sump and outside the pesticide building. It was identified as a dibromide solution which is sprayed in areas where herbicides/pesticides are used. Any contamination is assumed to have resulted from operations at the former area. It was also noted that stressed vegetation was observed leading from the shop and following a newly constructed road; however, SFAAP personnel indicated an underground steam line in the area may have impacted the vegetation.

Initial samples were found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Pesticides, Herbicides, Dioxins
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional RFI activities will be performed to fully define the extent of contamination. Potential remedial activities may include excavation and disposal of ~1,500 cy of pesticide-contaminated materials to an off-site facility. Confirmatory sampling will be performed.

CONTAMINATED WASTE PROCESSOR/EVAPORATIVE LAGOONS, SAAP-031

SITE DESCRIPTION

The Contaminated Waste Processor (CWP) and Evaporative Lagoon (8 acres total) are located in the central portion of SFAAP close to its western border. The CWP is an incinerator measuring ~40 x 60 ft. The CWP was designed to incinerate materials contaminated or suspected of being contaminated with explosives, and to decontaminate (flash) explosive-contaminated metal prior to salvage. Because the CWP could only handle materials with residual amounts of explosives, the waste materials to be incinerated were checked to insure they did not contain pockets of explosives. Waste residuals from the CWP were also analyzed for EP Toxicity. If results indicated the waste was hazardous it was treated/disposed off-site at a hazardous waste treatment facility. Otherwise it was landfilled on-site. The CWP operated between 1982 and 1996. Three existing monitoring wells have been in place around the lagoon since 1981. There is a potential for trace concentrations of explosives and propellant compounds such as NG, DNT, and soluble lead to be present after incineration. While these would not be explosion or fire hazards, they may be soluble and could potentially contaminate groundwater.

Initial RFI results indicated the presence of phthalates in the soil samples. No contamination has been found in the groundwater.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Phthalates, Dioxins, Phenols, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional RFI activities will be performed to fully define the extent of contamination. A remedial action including excavation, treatment, and disposal of ~800 cy of contaminated soil will be performed. Confirmatory sampling will be conducted. The lagoon will be closed in accordance with KDHE Nonhazardous Industrial Wastewater Lagoon Closure requirements.

Groundwater monitoring will be funded under SAAP-018 (OU 3).

LEAD DECONTAMINATION AND RECOVERY UNIT
SAAP-032

SITE DESCRIPTION

The Lead Decontamination and Recovery Unit (0.7 acres) is located on the central portion of SFAAP near the western border. The facility borders the Captain Creek flood plain. Surface drainage is toward a southwest drainage ditch which subsequently drains west near the Old Explosive Waste Burning Ground (SWMU 22) to Captain Creek. Some runoff also eventually drains into an oxbow lake near Captain Creek. The site consists of a small building and melting rack within a paved area, and encompasses approximately one half acre. The Recovery Unit was in operation from 1943 to 1970. Contaminated lead recovered from routine maintenance activities in the acid, NG, and propellant manufacturing buildings was placed on a rack and suspended over a tank. An overhead heater melted the lead, which then dropped into the tank. The lead was drained into molds and made available for salvage. Lead solids have been observed scattered throughout the site. Lead is the primary constituent of concern at this site. It is somewhat soluble under acidic conditions.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Lead, POL
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA, RFI, IRA
CURRENT IRP PHASE:
RC

RFI results indicated lead in soil above action levels. An underground storage tank (UST) was removed from this site under the UST program. Fuel oil contaminated soil associated with the UST will be addressed under this site. The CMS was completed and the lead contaminated soil (803cy) was excavated, treated and disposed off-site in FY02.

UST soil removal has been completed and the site has been closed.

The groundwater at this site is included in OU 3.

No further action is planned for this site.

PASTE AREA HALF TANKS AND DITCHES
SAAP-033

SITE DESCRIPTION

The Paste Area is located in the central portion of SFAAP just northeast of the NG Area. The Half Tanks in this area received wastewater from wash down of propellant processing equipment and buildings in the Paste Area, and possibly from buildings in the NG Area as well. They were used between the mid 1960s and 1971. The tanks discharged into 2 unlined settling ponds, then to Pyotts Pond. There are 2 steel Half Tanks (area totaling 1 acre) located upgradient from each of the settling ponds and are designated Half Tank 33/34 and 33/35. The 33/34 tanks are located southeast of the Paste Area between the Five Corners Settling Ponds and the Paste Sump, and the 33/35 tanks are located northwest of the Paste Area near the NG Settling Ponds. According to a survey, the settling ponds were abandoned and in disrepair. As a result, unidentified quantities of NC and NG were known to be in and around the lagoons. Reportedly, overflowing of the metal flumes and half tanks occurred. There was no secondary containment.

STATUS

RRSE RATING:

High

CONTAMINANTS: Lead, Nitrocellulose, Nitroglycerine, SVOCs

MEDIA OF CONCERN:

Sediment, Soil, Groundwater

COMPLETED IRP PHASE:

PA, RFA, RFI, IRA

CURRENT IRP PHASE:

RIP (2003) with LTM

FUTURE IRP PHASE:

RIP (2003) with LTM

The IRA occurred in FY02 and consisted of removal and decontamination of the Half Tanks, removal of ~60 cy of impacted soils from the Half Tanks and ~700 cy of contaminated soil from drainage ditches extending from each tanks to its stream discharge point. Confirmation samples were collected to verify that remaining soils met KDHE requirements. The ditches extending from the Half Tanks, up gradient to the source area, will be remediated as part of the SWMU 24 cleanup.

PROPOSED PLAN

Additional monitoring is being conducted at Half Tank 33/35.

FIVE CORNERS SETTLING PONDS
SAAP-034

SITE DESCRIPTION

The Five Corners Settling Ponds (0.4 acres) are located in the central portion of SFAAP, immediately south of the Paste Area and immediately east of the NG Area. There were 2 earthen, unlined ponds (5A, 5B), each ~40 ft in diameter. The ponds were used periodically from the early 1950s to 1971. There are no containment berms surrounding these ponds. The Settling Ponds received NG wastewater resulting from the wash down of equipment and buildings and from sprinkler trips.

RFI results indicated the presence of lead, nitroglycerin, nitrocellulose, and SVOCs in soil. The IRA occurred in FY02 and consisted of removal of 900 cy of contaminated soil and regrading.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Sediment
COMPLETED IRP PHASE:
PA, RFA, RFI, IRA
CURRENT IRP PHASE:
RC

PROPOSED PLAN

This site will be closed.

NITROGLYCERIN AREA SETTLING PONDS
SAAP-035

SITE DESCRIPTION

The NG Area Settling Ponds (0.4 acres) were located in the central portion of SFAAP, at the northeastern edge of the NG Area just north of the Paste Area. The 2 ponds (6A, 6B) were used periodically from the early 1950s to 1971 to receive wastewater resulting from the wash down of equipment and buildings, and from sprinkler trips. The propellant solids and sludge which settled in the ponds were occasionally removed during production and burned at the burning grounds. These ponds were investigated in 1985 and designated as Pond 6A (the southern pond) and Pond 6B (the northern pond). During site visits in both 1985 and 1987, Pond 6A was reported to contain approximately 16 inches of standing water, while Pond 6B was dry. Both ponds contained ~12-18 inches of sediment which appeared to be soil.

RFI results indicated the presence of lead, nitroglycerin, nitrocellulose, and SVOCs in soil. The IRA occurred in FY02 and consisted of removal of 1,300 cy of contaminted soil and regrading.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals, SVOCs
MEDIA OF CONCERN:
Sediment, Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI, IRA
CURRENT IRP PHASE:
RIP (2003) with LTM
FUTURE IRP PHASE:
RIP (2003) with LTM

PROPOSED PLAN

LTM will continue for 3 years. Replace one groundwater well.

N-LINE AREA
SAAP-036

SITE DESCRIPTION

The N-Line (301 acres) is located in the south central portion of SFAAP. Production occurred in this area during three periods of operation: 1943 through 1946; 1951 through 1960; and 1965 through 1971. In this area the final machining and inspection of extruded and cut propellant grains occurred. Off-spec materials and trimmings were sent to a grinding mill and then back to the F-Line Area for reblending. Wastewater originated primarily from floor and equipment washing and flowed through floor drains into unlined ditches which lead to a small tributary of Spoon Creek. There were ~20 eastwardly trending ditches and 2 concrete settling sumps. During several site visits in the late 1980s, the ditches were reportedly well vegetated, except those which received storm water. Propellant solids containing NG and lead salts settled in these ditches. The propellant formulations stored in this area were single or double base and were generally reactive. The N-Line was known as the solventless propellant area along with the F-Line.

STATUS

RRSE RATING:
Medium

CONTAMINANTS:
Lead, Propellants, POL

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RFI, CMD, CMI

The RFI report states that risks due to the ingestion of groundwater by residential receptors exists. The RFI recommended CMS and removal action.

Propellant and lead contaminated soil was identified during the RFI. Lead and nitroglycerin were found in groundwater.

In 2001, this site was increased in size. This additional area will need to be investigated. The two Tunnel Dryers (SAAP-043) within this SWMU boundary will be investigated and cleaned up under this site.

PROPOSED PLAN

Additional RFI activities will be performed to determine extent of contamination. Remedial activities will include excavation, treatment and disposal on-site of ~16,000 cy of contaminated soil. Waste propellant will be removed from the two sumps and confirmatory sampling will be conducted. Contaminated soil includes ~1,000 cy from a leaking UST containing POL products.

SANDBLAST AREAS
SAAP-037

SITE DESCRIPTION

Sandblasting occurred in several locations (totaling ~3 acres) during various periods of operation. From ~1964 to 1969, an area east of the former Maintenance Office Building 245-3 was used for sandblasting. Between 1980 and 1984, an area west of the Paint and Sign Shop Building 504 was used. Additionally, documents indicate an area south of the Equipment Storage Building 566-1 was used. It is believed this area was used prior to 1980, but records of this use were not available. Sandblasting was used to prepare equipment such as motors, pumps, pipes, trailers and heavy equipment for painting and preservation. The bulk of the sand recovered was disposed in the sanitary landfill; however, residual sand was left on the ground in these areas. In addition, sand was not contained during the sandblasting operations and was therefore able to migrate through the air. The primary concerns at these sites are paint wastes and their constituents, especially metals such as lead, chromium, and cadmium.

Initial samples were found to be unreliable, and therefore the site must be resampled.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional sampling will be completed. The project will proceed with excavation, treatment and disposal on-site of 3,000 cy of contaminated soil.

OIL WATER SEPARATOR
SAAP-038

SITE DESCRIPTION

The Oil Water Separator (0.5 acres) was located in the north central portion of SFAAP. It began operation in 1971 to service the auto maintenance shop located in Building 542. A majority of the flow to the separator was derived from the floor drain in the car wash bay. Additional wastewater sources include rainwater and condensate from steam radiators used to heat the building. Although no oil or grease was reportedly dumped into the drains leading to the separator, a small quantity of sludge collected in the tank. Sludge was removed from the tank in 1987 and tested for TCLP prior to transfer to the Sanitary Landfill (SWMU 18). This was the first recorded removal of sludge. During a site visit in 1990, the integrity of the tank was questioned because there was influent to the separator, but the tank did not appear to be filling. Oil stains and bare ground were noted under and downgradient of the half tank. It was also indicated that there was visual evidence of potential release to the surface water and soil.

Initial samples were found to be unreliable, and therefore the site must be resampled.

The RI sampling was completed in January 2004.

STATUS

RRSE RATING:

High

CONTAMINANTS: Pesticides, Metals, VOCs, TPH, SVOCs

MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:

PA, RFA

CURRENT IRP PHASE:

RFI (funded)

FUTURE IRP PHASE:

CMD, CMI

PROPOSED PLAN

Complete the RI report. Excavation, treatment and on-site disposal of 500 cy of contaminated soil may be needed.

SOUTH ACID AREA DITCHES
SAAP-039

SITE DESCRIPTION

The South Acid Area Ditches (11 acres) is located in the east central portion of SFAAP. Two primary drainage ditches originate near the Calcium Cyanamide Disposal Area (SWMU 40). A third influent ditch from the NG and Paste Mix Areas joins the west ditch. All three ditches discharge into Pyotts Pond. During a site visit in 1990, the surface water observed in the east ditch was tinted orange; a white precipitate was observed along both ditches. Reportedly the orange color was caused by the neutralization of acidic ferrous sulfate and sulfuric acid with hydrated lime. The sediment was reported to contain ferrous sulfate and calcium sulfate. Wastes handled at this site include sulfuric and nitric acids, and wastes from the SAC LWTP which may have contained NQ. The sediment at this site reportedly contained ferrous sulfate and calcium sulfate resulting from hydrated lime dehydration of sulfuric acid and acidic ferrous sulfate.

Initial samples were found to be unreliable, therefore the site must be resampled.

A large portion of the resampling effort has been completed. No contamination requiring remedial action has been found.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals, Nitrates, Sulfates
MEDIA OF CONCERN:
Surface Water, Sediment, Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI
CURRENT IRP PHASE:
IRA
FUTURE IRP PHASE:
RC

PROPOSED PLAN

A limited soil removal may be needed.

Groundwater monitoring will be funded under SAAP-013 (OU 2).

CALCIUM CYANAMIDE DISPOSAL AREA
SAAP-040

SITE DESCRIPTION

The Calcium Cyanamide Disposal Area (2 acres) is located in the east central portion of SFAAP. Waste from the operation of the NQ pilot plant was disposed of in a natural ravine at this site. Calcium cyanamide was generated for wet guanidine nitrate (GN) production and delivered to the NQ pilot plant from the main NQ Area. Whenever the carbide content was too high for acceptance at the pilot plant, the calcium cyanamide was taken to the Calcium Cyanamide Disposal Area. The calcium cyanamide and calcium carbonate sludge was disposed of in this area for only a 3-month period in 1982. The waste material, consisting of calcium cyanamide and fluorspar, was later covered to form a landfill, and enclosed by a barbed-wire fence. The fenced-in area comprises approximately one acre; however, less than half of the area was actually used for disposal of the calcium cyanamide waste. The 200' X 60' disposal area is located in the northeastern portion of the landfill, an area which is now a grassy plateau which slopes downward ~15 ft. An evaporation pond is located in the southwest portion of the landfill. White and black stains were observed along the edges of the pond during site visits in 1989 and 1990.

There is some concern that the surface water runoff from this site drains to Pyotts Pond via the South Acid Area Drainage Ditch discussed in the previous section (SWMU 39).

Initial samples were found to be unreliable, therefore the site must be resampled for SVOCs, VOCs, metals, sulfates and cyanide.

STATUS

RRSE RATING:
Medium

CONTAMINANTS:
Metals, Sulfates

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

COMPLETED IRP PHASE:
PA, RFA

CURRENT IRP PHASE:
None

FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional RFI activities will be conducted to determine the extent of contamination. Approximately 5,000 cy of waste will be removed from the disposal area.

Groundwater monitoring at this site will be funded under SAAP-013 (OU 2).

CALCIUM CARBONATE CAKE LANDFILL
SAAP-041

SITE DESCRIPTION

The Calcium Carbonate Cake (CCC) Landfill (2 acres) is located in the west central portion of SFAAP. It measures ~350 x 315 ft and was operated from May 1986 to June 1988. Between May 1988 and December 1991, the CCC was provided to farmers rather than landfilled. This practice was discontinued in December 1991. Initially, containerized CCC was disposed of at this site, but later uncontainerized CCC was deposited. The source of CCC was NQ production. CCC is a byproduct of GN manufacturing. GN is an intermediate product of NQ. A leachate collection system was installed in the CCC Landfill at the time of construction. The leachate in the collection system tank is reportedly monitored. During a site visit in 1990, it was noted that the landfill cap was cracked, vegetative cover was sparse, and erosional features had developed.

In 1998, the landfill cap was repaired and graded to minimize erosion. Also, new ground cover was established. All work was inspected and accepted by KDHE representatives.

Per KDHE's requirement, additional wells were installed in FY02.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Nitrates, SVOCs, Sulfates
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI, IRA
CURRENT IRP PHASE:
RIP (2000) with LTM
FUTURE IRP PHASE:
RIP (2000) with LTM

PROPOSED PLAN

LTM will continue. The cap is maintained with non-IRP funds.

TEMPORARY SANITARY LANDFILL
SAAP-042

SITE DESCRIPTION

The Temporary Sanitary Landfill (3 acres) is located in the west central portion of SFAAP, adjacent to the CCC Landfill discussed in the previous section (SWMU 41). It was used to manage non-hazardous solid waste consisting of general trash and sanitary waste. CCC was initially landfilled in the first cell; however, that practice was discontinued.

It was reported that empty pesticide bottles were observed lying in and adjacent to standing water at the time of the 1990 site visit; however, SFAAP reported these bottles were triple rinsed prior to disposal. During the site visit in 1992, it appeared that the landfill consisted of three cells.

The cap is maintained with non-IRP funds. Groundwater monitoring will be addressed under SAAP-041.

STATUS

RRSE RATING:
Medium

CONTAMINANTS:
Nitrates

MEDIA OF CONCERN:
Groundwater

COMPLETED IRP PHASE:
RFA, RFI, CMI

CURRENT IRP PHASE:
RC - 2001

TUNNEL DRYERS (CCC STORAGE) SAAP-043

SITE DESCRIPTION

There are a total of six Tunnel Dryers (8 acres), all were used for temporary storage of CCC. Four of the dryers are located in the west central portion of SFAAP. The 2 remaining dryers are located in the southern portion of SFAAP and will be handled under SAAP-036. The dryers began operation in 1986. Each dryer measures ~125 x 18 ft, with 6 ft high walls, and each has a leachate collection system. CCC was a byproduct of the GN step of the NQ production process. The CCC was loaded into dump trucks via conveyor in the NQ area and transported to the tunnel dryers. The CCC was dumped into the dryer and arranged using a front-end loader. The product was ultimately offloaded from the tunnel dryers by vendors. The tunnel dryers are not enclosed. During a site visit in 1990, it was observed that CCC had been tracked beyond the walls of the tunnel dryers by the trucks loading and unloading at the site.

Initial groundwater samples were found to be unreliable, therefore the site must be resampled. The extent of soil contamination has not been determined.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Nitrates, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI

PROPOSED PLAN

Additional RFI activities will include sampling of soil and groundwater. Five new wells will be installed.

Groundwater monitoring will be funded under SAAP-018 (OU 3).

TANK T784
SAAP-044

SITE DESCRIPTION

Tank T784 (1 acre) is located in the northwest corner of the NQ area in the northwest portion of SFAAP. Limited production began in the NQ Area in 1981. Tank T784, also known as Structure 9049, is a vertical steel above ground wastewater collection tank which held cooling tower blowdown water, NQ crystallizer condensate, GN evaporator condensate, and non-contact cooling water. A pipe discharged the wastewater from T784 into the River Water Treatment Plant (RWTP) Lagoons (SWMU 2), via an underground transfer line. This pipe follows the north plant boundary before turning directly north towards the lagoons. Several releases have occurred as a result of breaks in the RWTP Lagoon transfer line. Tank overflows have also occurred. There are no spill containment structures for the tank.

Initial samples were found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Solvents, Nitrates
MEDIA OF CONCERN:
Soil, Groundwater, Surface Water
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RFI (funded)
FUTURE IRP PHASE:
RC

PROPOSED PLAN

Additional RFI activities (already funded) are being conducted to determine if contamination is present in the soil and groundwater. No further action is expected.

The groundwater monitoring will be funded under SAAP-045 (OU 1).

BUILDING 9040 (CALCIUM CYANAMIDE CONVEYORS & STORAGE UNIT), SAAP-045

SITE DESCRIPTION

Building 9040 (2 acres) is the wet GN building. It is located in the central part of the NQ Area in the northwestern portion of SFAAP. The NQ Area began limited production in 1981. Calcium cyanamide was produced in Building 9004 and transferred via belt conveyor to Building 9040 for use in the GN process. The belt conveyor, which lead to storage bins located on the east side of Building 9040, is enclosed in an elevated, sheet metal galleyway. There are four 175-ton storage bins. Calcium cyanamide was released at the bins because of problems with the screw conveyors used to transport material from Building 9004. A concrete pad was constructed in a small portion of the area under the storage bins; however, the pad was too small to effectively contain the spillage, especially in windy conditions. Bare spots were observed in areas near the storage bins.

A drainage divide is located in the NQ Area running east of Building 9040. It separates the Captain Creek drainage area from the area drained by unnamed creeks flowing northward toward the Kansas River.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals, Nitrates
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RFI
FUTURE IRP PHASE:
CMD, CMI, CMI(O), LTM

Initial samples (1995) were found to be unreliable; therefore the site was resampled in 2003. The preliminary results indicate that the nitrate plume is not leaving SFAAP. Additional RFI activities included a hydrologic assessment and collection of geotechnical and geochemical data to facilitate a technology evaluation of potential remedies to address nitrate-contaminated groundwater.

PROPOSED PLAN

A Risk Assessment (RA) and Corrective Measures Study (CMS) will be produced to evaluate potential remedial options. Continue to monitor groundwater.

Groundwater monitoring for all of OU 1 (SAAP-027, 044, 045, 047, AOC 17) will be funded under this site.

DECONTAMINATION OVEN
SAAP-046

SITE DESCRIPTION

The Decontamination Oven (2-acre site) is located in the northeast portion of SFAAP. The oven was constructed in 1970 and was used to decontaminate oversized equipment/materials contaminated with trace explosives. There were no secondary containment features at this site (PRC, 1990). Only trace explosives were treated in this area. It may have been possible for volatile contaminants to be released via the exhaust fan during heating. Lead may have been released from the equipment and vehicles decontaminated at this site.

Initial samples were found to be unreliable, therefore the site must be resampled.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional soil samples will be taken. It is expected that ~400 cy of contaminated soil will be excavated, stabilized and disposed on-site.

NITROGUANIDINE PRODUCTION AREA (25) SUMPS SAAP-047

SITE DESCRIPTION

The NQ manufacturing facilities are located in the northwest corner of SFAAP. Construction of these facilities began in the late 1970s with limited production during 1981. In August 1984, the plant began bulk production of NQ, producing ~4.9 million pounds through 1985, and 7.7 million pounds in 1986. There are 25 sumps (0.7 acres) in the NQ Area. Each of the production buildings had dedicated sumps outside the buildings which received wastewater generated by operations in the NQ Area. The wastewater resulted from equipment washdowns, spills, runoff, and non-contact operations, such as cooling water and steam condensate. The wastewater may have been acidic and may potentially have contained contaminants such as NQ and GN, as well as raw process materials or intermediates of the NQ process.

RFI results indicate elevated levels of nitrates in groundwater and the soil around the sumps of Bldg 9040. Elevated levels of sodium were also detected.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals, Ordnance Compounds
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA, IRA
CURRENT IRP PHASE:
RFI
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

A RFI and focused CMS will be completed to confirm contaminant characteristics and evaluate potential remediation options. Remediate all of the 25 sumps.

Groundwater monitoring will be funded under SAAP-045 (OU 1).

NITROGUANIDINE SUPPORT AREA
SAAP-048

SITE DESCRIPTION

The NQ Support Area (6 acres) is located in the north central portion of SFAAP in Buildings 2000 and 2012. The equipment included dryer bays, aboveground storage tanks, and half tanks. This was the location of the pilot-scale production plant known as the NQ Support Equipment (NSE) facility. The NSE facility was constructed during 1977-1980 and was operated periodically as a partial proveout from May 1979 to June 1984. In August 1984, the main NQ plant began production. The majority of the pilot plant was demolished sometime following shut down; however, Buildings 2000 and 2012 are still present. This site was the location of the former nitrocellulose facility, used from 1942-1971.

RFI results indicate the presence of elevated levels of nitrates, NQ, GN and sulfates in soil and groundwater.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Nitrates, Sulfates, NQ, GN
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFA, RFI
CURRENT IRP PHASE:
RIP (2000) with LTM
FUTURE IRP PHASE:
RIP (2000) with LTM

PROPOSED PLAN

The Army is currently determining lateral extent of the plume. LTM will be conducted.

ROAD JUST SOUTHEAST OF THE SANITARY LANDFILL, SAAP-049

SITE DESCRIPTION

The road just southeast of the Sanitary Landfill is located on ~6 acres near the central western border of SFAAP. Along the road located just east of the Sanitary Landfill (SAAP-018) is a steep slope, which, upon inspection, revealed the presence of drums, construction rubble and other refuse apparently underlying the road. It appears the road may have been built over the landfill or may be comprised of fill from the landfill to construct the road base.

A geophysical survey indicated the presence of subsurface anomalies south of SAAP-018 that may include metal objects.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Groundwater
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI

PROPOSED PLAN

Additional samples will be collected to insure that this site is not a contributor to groundwater contamination at SAAP-018.

This site may be capped consistent with the remedial action at SAAP-018.

Groundwater monitoring will be funded under SAAP-018 (OU 3).

DISPOSAL SITE EAST OF THE CLASSIFICATION YARD, SAAP-050

SITE DESCRIPTION

SAAP-50 consists of two areas. The first area (50 north) is an abandoned dump site (6.5 acres) that was discovered just inside the eastern boundary of SFAAP near Kill Creek. The second area (50 south) consists of another abandoned dump site (3.2 acres) immediately adjacent to the other area. The debris scattered about both sites includes shingles, drums and metal slag. An interim removal was accomplished in FY97. Additional debris was removed and rip-rap was placed over select areas to stabilize the bank in 2000.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals, Solvents
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
PA, RFI, IRA (at 50 South)
CURRENT IRP PHASE:
RIP (2001) with LTM
FUTURE IRP PHASE:
RIP (2001) with LTM

PROPOSED PLAN

Cover maintenance will continue. In FY05, limited debris removal and cover stabilization will be conducted.

NEW RECLAMATION YARD
SAAP-051

SITE DESCRIPTION

The New Reclamation Yard is located on ~8 acres in the north central portion of SFAAP and includes the Battery Handling Area. The yard was used to stage scrap materials and excess equipment. Scrap was decontaminated to 5X standards prior to sale or reclamation. In the battery handling area, battery parts were observed on the ground. Wastes typically associated with batteries include acids and metals, particularly mercury, lead and/or cadmium, depending upon the type of battery.

Initial samples collected in the battery handling area were found to be unreliable, therefore the site must be resampled. As a result of the EBS, this site was expanded from just the Battery Handling Area to include the entire Reclamation Yard. Additionally, samples will be collected to characterize the entire Reclamation Yard.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA,RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Additional samples will be taken. Approximately 3,200 cy of metals-contaminated soil will be excavated, treated and disposed. Confirmatory sampling will be conducted.

PAINT BAY BUILDING 542
SAAP-052

SITE DESCRIPTION

Building 542 (0.4 acres) is located in the north central portion of SFAAP. A paint bay, located within the building, was used to repaint vehicles. Fumes and overspray were vented through the side of the building where stressed vegetation has been observed. Wastes typically associated with paint bays include volatile organics and metals such as chromium, cadmium and lead.

Initial samples were found to be unreliable; therefore the site was resampled in 2003. The preliminary results indicated no contamation above regulatory levels for unrestricted use.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals, VOCs
MEDIA OF CONCERN:
Soil
COMPLETED IRP PHASE:
PA, RFA
CURRENT IRP PHASE:
RFI
FUTURE IRP PHASE:
RC

PROPOSED PLAN

A closure certificate will be completed.

BURN AND DEBRIS AREA NORTH OF STP SAAP-053

SITE DESCRIPTION

The Burn and Debris Area North of STP (Sewage Treatment Plant) is located on ~5 acre in the northeast portion of SFAAP. A sequence of aerial photographs taken of SFAAP beginning in 1941 and ending in 1991 show the old Burn and Debris Area. An inspection was done on September 18, 1997. A wood pile is still there, but the road is covered over with vegetation. The debris begins around the fence line near the main road by the sewage treatment plant. It is comprised of construction debris including heavy duty concrete rubble, rusted out 55-gallon steel drums, glass rubble, broken insulators, pipe debris, wood scraps, telephone poles, wire fencing, concrete pipe pieces, iron scraps and asbestos materials. The debris covers ~1 acre and extends from the fence line, following the creek until reaching the open area where a quarry existed. Debris is on both sides of the creek and in the creek bed itself.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals, PAHs
MEDIA OF CONCERN:
Groundwater, Soil, Surface Water
COMPLETED PHASE:
PA, RFA
CURRENT PHASE:
RFI
FUTURE PHASE:
CMD, CMI, LTM

PROPOSED PLAN

Complete the RFI. Soil/debris removal (~500 cy) may be needed. Long-term monitoring is expected.

FLUORESCENT TUBE WELLS
SAAP-054

SITE DESCRIPTION

SAAP-054 is three Fluorescent Tube Wells (totaling less than 1 acre) located in the northwestern portion of SFAAP, east of the NQ production area. The sites consists of hand dug water wells that were part of old pre-SFAAP homesteads. One of the wells is five feet in diameter, about twelve feet deep and lined with concrete. This well was used as a fluorescent tube disposal pit. It is uncertain when this occurred, but is suspected to have taken place prior to 1976. The well is uncovered and full of water. Fluorescent tubes contain mercury.

An additional two wells were identified as being used for fluorescent tube disposal. The broken fluorescent tubes and contaminated soil were removed from all three wells.

This site includes the well identified in the Environmental Baseline Survey (EBS) prepared for the Army by Aguirre Engineers, dated October 1998, as being located in Parcel 1-7(4)HR.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Mercury
MEDIA OF CONCERN:
Groundwater
COMPLETED PHASE:
PA, RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI

PROPOSED PLAN

Install monitoring wells and sample to verify that the contents of the three wells did not have an adverse impact to groundwater. The remaining well will be closed in accordance with KDHE well abandonment requirements.

OLD ADMINISTRATIVE BUILDINGS
SWMU-055

SITE DESCRIPTION

Not in AEDB-R.

The Old Administrative Buildings are located in the northeast portion of SFAAP. SWMU 55 is soil with potential lead-based paint contamination next to the Old Administration Buildings. This SWMU is located in Parcel 1-1(1) shown in the EBS.

Lead-based paint removal is not ER,A-eligible. Lead contamination will be addressed if the buildings are demolished by the future land owner.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

WELL SOUTH OF FACILITY 211
SWMU-056

SITE DESCRIPTION

Not in AEDB-R.

The Well South of Facility 211 is located in the northeast portion of SFAAP. SWMU 56 is the area of nitrate/nitrite contamination in the area south of Facility 211. Contamination has been documented in a monitoring well south of this facility. This SWMU is located in Parcel 1-25(7)HR(P) shown in the EBS.

Groundwater and soils were sampled by USACHPPM in March 2003. None of the soil results exceeded EPA Region IX PRGs. No contamination was detected in the groundwater.

USACHPPM's March 2003 RRSE Report recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Nitrate, Nitrite
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

CHEMICAL PREPARATION HOUSE
SWMU-057

SITE DESCRIPTION

Not in AEDB-R.

The Chemical Preparation House (Facility 507-2) is located in the north central portion of SFAAP. Chemicals may have been disposed on the ground outside of this building. This SWMU is located in Parcel 1-27(7)HR(P) as shown in the EBS.

Soil samples were collected by USACHPPM in March 2003. None of the samples exceeded background levels.

USACHPPM's March 2003 RRSE Report recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
SVOC
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

COMBINED SHOPS AREA
SAAP-058

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Combined Shops Area (24 acres) is located in the north central portion of the plant, and was used for maintenance activities and repairs. There are a total of 30 facilities in the area. The facilities include: three offices, the fuel oil unloading station, storage and distribution center, 12 storehouses, and nine shops. There was a Tram Repair Shop that was converted into a Heating Plant (Formerly Facility 522, Currently Facility 154-5). Several facilities in the Shop Area are visibly stained. This site is located in Parcel 1-28(7)HR(P) shown in the EBS.

Groundwater and soils were sampled by USACHPPM in March 2003. PCE results in the groundwater exceeded the EPA Region IX PRGs. PCE, PAHs, lead, arsenic and manganese results from soil exceeded the EPA Region IX PRGs.

STATUS

RRSE RATING:
High
CONTAMINANTS:
VOCs, Metals, PAH
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED IRP PHASE:
RFA
CURRENT IRP PHASE:
None
FUTURE IRP PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat, and dispose of 400 cy of contaminated soil. One round of confirmatory sampling will be taken.

LAUNDRY FACILITY
SWMU-059

SITE DESCRIPTION

Not in AEDB-R.

The Laundry Facility (Facility 4562) is located in the north central portion of the plant. This facility was used to launder worker clothing to remove process wastes and propellant contamination. The Laundry Shop was a single story facility with a concrete floor containing several sumps and drains. There were two fuel oil tanks located outside of the facility. This SWMU is located in Parcel 1-30(7)HR(P) shown in the EBS.

Soil sampling was conducted by USACHPPM in March 2003. All results of the soil sampling were below EPA Region IX PRGs.

USACHPPM's March 2003 RRSE Report recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
VOCs
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

OLD PHOTOGRAPHIC LABORATORY
SAAP-060

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Old Photographic Laboratory (3 acre site) is in the southeast corner of the Old Administration Building No. 2 (Facility 214), which is located in the northeast portion of SFAAP. Wastes from the laboratory were commonly dumped into the sink, which discharged directly to soils behind the facility. Cleanup inside the building will be handled outside of ER,A. This site is located in Parcel 1-31(7)HR(P).

Soil was sampled by USACHPPM in March 2003. SVOCs and arsenic results exceeded the EPA Region IX PRGs.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
SVOCs, Arsenic
MEDIA OF CONCERN:
Soils
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat, and dispose of 75 cy of contaminated soil from outside of the building.

ENVIRONMENTAL LABORATORY (FACILITY 232) SWMU-061

SITE DESCRIPTION

Not in AEDB-R.

The Environmental Laboratory (Facility 232) is located in the north central portion of the plant. The Environmental Laboratory was built in 1982 and contains sumps and drains. Past waste disposal practices are not documented. This SWMU is located in Parcel 1-32(7)HR(P) shown in the EBS. This was an active lab until Jan 2003. It is not ER,A eligible.

Future actions will be administered outside the ER,A program.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None
FUTURE PHASE:
None

TRANSFORMER STORAGE WAREHOUSE (FACILITY 566-5), SWMU-062

SITE DESCRIPTION

Not in AEDB-R.

The Transformer Storage Warehouse (Facility 566-5) is located in the north central portion of the plant. At the time of the EBS, this facility stored 149 replacement transformers. Based on visual inspections, several stains were observed on the concrete floor, and some of the transformers currently stored in the facility were observed to be leaking. The facility is considered a potential area of concern. All of the transformers currently stored were tested for PCB content and were below 50 ppm; however, labels were lacking on most of the transformers. It was impossible to determine if all the stains noted were caused by the transformers currently stored or by transformers previously stored at the facility. Cleanup and disposal of the transformers and building will be administered outside the authority of ER,A. This SWMU is located in Parcel 1-34(7)HR(P)/PR(P) shown in the EBS. This site was remediated in 2004 (Non-ER,A funds) and no further action is expected.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
PCB
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
IRA
FUTURE PHASE:
RC

WATER TOWERS
SAAP-063

SITE DESCRIPTION

This site will be open in AEDB-R in spring 2004.

The Water Towers (7 acres total) are located throughout the plant. There are 8 water towers consisting of the north towers #'s 1, 2, 3 and 4 and the south towers #'s 5, 6, 7 and 8. The surface soil surrounding the Water Towers are contaminated with lead, originating from lead-based paint. The towers were painted several times before 1978, and sandblasted each time before they were repainted. Documentation was available to confirm that no measures were taken to contain the removed paint during or after sandblasting operations.

Soil samples were collected by USACHPPM in March 2003. Arsenic and lead results exceeded EPA Region IX PRGs.

Two other water towers located in the NC Area will be remediated under SAAP-116 (AOC 16).

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat, and dispose of ~5,000 cy of contaminated soil.

PAPER BURNING GROUND
SAAP-064

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Paper Burning Ground (3 acres) is located in the east central portion of the plant. A trench was observed on aerial photographs encompassing 200 X 30 feet. Contaminants may have extended to a depth of 5 feet below ground surface. This SWMU is located in Parcel 1-38(7)HR(P) shown in the EBS.

Soil samples were collected by USACHPPM in March 2003. Arsenic results in soil exceeded the EPA Region IX PRGs. The soil results were used to estimate the potential levels of compounds in groundwater. Arsenic, chromium and lead are estimated for groundwater as exceeding the EPA Region IX PRGs.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI, CMD. CMI, LTM

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. One well will be installed as part of the RFI. Excavate, treat, and dispose of ~1,600 cy of contaminated soil. Long-term monitoring may follow.

TANK FARM
SAAP-065

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Tank Farm site (~22 acres) is located in the north central portion of the plant, Parcel 8-2(7)HR(P) as shown in the EBS. The tank farm received and processed recycled solvents which included alcohol and acetone. Numerous releases have been documented from within the Tank Farm. Although the tanks were removed, the foundations and saddles remain.

Groundwater and soil samples were collected by USACHPPM in March 2003. Arsenic and lead results for groundwater exceeded the EPA Region IX PRGs. Arsenic and benzo(a)pyrene results for soil exceeded the EPA Region IX PRGs.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
PAHs, Metals
MEDIA OF CONCERN:
Soil, Groundwater
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI, CMD, CMI, LTM

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat, and dispose of 4,100 cy of contaminated soil. Five years of LTM.

INSTALLATION-WIDE SURFACE WATER SAAP-066

SITE DESCRIPTION

This site will be opened in AEDB-R in sping 2004.

In Feb 2000, EPA ordered SFAAP to conduct stream monitoring. This site will be designated for sampling the installation-wide surface waters of Captain (10,861 linear feet), Hanson (6,900 linear feet), Kill (9,097 linear feet), and Spoon (18,506 linear feet) Creeks. Initial stream surface water and sediment sampling was conducted under SAAP-014, except for Hanson Creek, which was conducted under SAAP-002.

Phase I of the stream sampling was completed in 2003. Phase I included sediment and surface sampling. Sediment sample contaminants above KDHE RSK residential soil to groundwater pathway values were arsenic, nitrocellulose and TPH-DRO. Surface water sample contaminants above KDHE RSK residential groundwater pathway values were maganese, dieldrin, di-n-octyl phthalate and lead.

Phase II is underway, and includes surface water sampling only.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Metals, TPH
MEDIA OF CONCERN:
Surface Water, Sediment
COMPLETED PHASE:
PA
CURRENT PHASE:
RFI
FUTURE PHASE:
RFI

PROPOSED PLAN

Phase III includes sediment and surface water sampling to characterize changes over time.

SOUTH ACID AREA
SAAP-067

SITE DESCRIPTION

This site will be open in AEDB-R in spring 2004.

The South Acid Area (26 acres) is located in the east central portion of SFAAP, and consists of tanks, troughs, pipes and other conveyances. The plant manufactured nitric and sulfuric acids. This area was used from 1942 to 1980. This site includes the areas identified as AOC 7- Former Truck Maintenance Shop in South Acid Area, AOC 8- Former Fuel Oil Storage Tank in South Acid Area, and AOC 9- Oil and Paint House in South Acid Area. The ditches from the South Acid Area to Pyotts Pond are included in SAAP-039.

Groundwater and soil samples were collected by USACHPPM in March 2003. None of the groundwater results exceeded EPA Region IX residential PRGs. Benzo(a)pyrene, lead and arsenic results in soil exceeded the EPA Region IX PRG.

STATUS

RRSE RATING:
Medium

CONTAMINANTS: Nitrates, Sulfates, Metals, SVOCs, PAHs, TPH

MEDIA OF CONCERN:
Soil, Groundwater

COMPLETED PHASE:
RFA

CURRENT PHASE:
None

FUTURE PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat, and dispose of ~15,600 cy of contaminated soil.

Groundwater monitoring will be funded under SAAP-013 (OU 2).

MONITORING WELL WEST OF OLD ADMIN AREA SAAP-101 (AOC 1)

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Monitoring Well West (32 acre site) of the Old Administration Area is located in the northeast portion of SFAAP. AOC 1 is the area of nitrate/nitrite groundwater contamination west of the Old Administration Area. Contamination has been documented in a monitoring well in this area. This AOC is located in Parcel 1-26(7)HR(P) shown in the EBS.

The Army funded sampling in 2003 for nitrates in groundwater and found detections right at the action level. Currently, the source of the nitrates is unknown.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Nitrates
MEDIA OF CONCERN:
Groundwater
COMPLETED PHASE:
RFA
CURRENT PHASE:
RFI
FUTURE PHASE:
RFI

PROPOSED PLAN

This site will be monitored.

MAIN ELECTRICAL SWITCH YARD AOC 2

SITE DESCRIPTION

Not in AEDB-R.

The Main Electrical Switch Yard (Facility 154-4) is located in the center of the plant. Based on interviews with former employees, a transformer fire resulting from a lightning strike occurred around 1945. The majority of the transformers (assumed to contain PCBs based on the time period) were said to have been destroyed by the fire. This site was active until 2003. This AOC is located in Parcel 1-29(7)HR(P) shown in the EBS. The transformers were removed in 2003.

This site was remediated in 2004 with non-ER,A funds. Therefore, no further action is expected.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

NEW PHOTOGRAPHIC LABORATORY (FACILITY 227-18) AOC 3

SITE DESCRIPTION

Not in AEDB-R.

The new Photographic Laboratory (Facility 227-18) (0.2 acres) is located in the north central portion of the plant and operated between 1990 and 1998. Based upon interviews, a common waste disposal practice in the photography laboratories was to dispose of the wastes in the sinks. The location of the sink drain outfall has not been identified. Because this facility was active after 1986, it is not eligible for remedial action under ER,A. This AOC is located in Parcel 1-33(7)HR(P) shown in the EBS.

Future actions will be administered outside the ER,A program.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None
FUTURE PHASE:
None

DISPOSAL AREA SOUTHEAST OF STP AOC 4

SITE DESCRIPTION

Not in AEDB-R.

The Disposal Area (0.3 acres) Southwest of the STP (Sewage Treatment Plant) is located in the northeast portion of SFAAP. This AOC is the area southwest of the STP where several trenches were noted on historical aerial photographs. This area may have been the Mess Hall Landfill. This AOC is located in Parcel 1-37(7)HR(P) shown in the EBS.

Sampling by USACHPPM in March 2003 identified arsenic in the subsurface soil and surface soil as exceeding EPA Region IX PRG screening levels. However, the detections were below background levels. USACHPPM's March 2003 RRSE Report recommends no further action at this site.

The USACHPPM report is being reviewed by the regulators.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

CANNON RANGE TUNNELS (FACILITY 303) AOC 5

SITE DESCRIPTION

Not in AEDB-R.

AOC 5 is the Cannon Range Tunnels located in the eastern portion of SFAAP. The Army fired 2.75 inch inert rockets in these tunnels at this site. During the 1998 EBS site investigation of the Cannon Range Tunnels (Facility 303), it was noted that 32, 55-gallon drums were stored within the southern tunnel. It was later determined that these drums contained investigation-derived waste. Iron piping material, commonly used for explosive reactivity testing, was observed in the drums. The greatest potential for surface soil contamination was anticipated to be along the firing line leading from the platforms to the tunnels and within the tunnels. During a 1988 RI field program conducted at the Cannon Range, six surface soil samples were collected downrange of the firing line and a composite sample was collected from each tunnel. Samples were analyzed for priority pollutant metals, explosives, and TCLP. Analytical results indicate that explosives and metals were present in the soil at low levels. This AOC is located in Parcel 2-11(7)HR(P) shown in the EBS.

All drums located in the Cannon Range Tunnels were moved to a central storage area for future disposal or if clean were disposed off-site. During USACHPPM's March 2003 RRSE sampling, arsenic was the only compound exceeding the EPA Region IX PRG value, but below background level.

USACHPPM's March 2003 RRSE Report recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Explosives
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

35 PROCESS FACILITIES WITHIN F-LINE AREA AOC 6

SITE DESCRIPTION

Not in AEDB-R.

AOC 6 consists of thirty-five process facilities (89 acres) located to the west of the F-Line Area, in the east central portion of the plant. This AOC is located in Parcel 2-18(7)HR(P) shown in the EBS. This parcel has been delineated to include each of the following facilities D120-7, F120-4, F120-8, 181-3, 563, 5815-1, 5815-2, 5815-3, 5816-2, 5822, 5823, 5837, 5850, 5861, 7803-1, 7803-2, 7803-3, 7803-4, 7814, 7815-1, 7816-1, 7816-2, 7816-3, 7826, 7827, 7828, 7832, 7866, 7868-1, 7868-2, 7868-3, 7868-4, 7871-2, 7897, and 7898.

This site is being handled under SAAP-010.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
Lead, Explosives, SVOCs, POL
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

AOC 7-9

SITE DESCRIPTION

Not in AEDB-R.

AOC 7: Former Truck Maintenance Shop in South Acid Area consists of the area where a methylene chloride release was detected in the South Acid next to the Former Truck Maintenance Shop. This AOC is located in Parcel 3-4(3)HR shown in the EBS.

AOC 8: Former Fuel Oil Storage Tank in South Acid Area consists of the area where a chloroform release was detected in the South Acid next to the Former Fuel Oil Storage Tank. This AOC is located in Parcel 3-5(3)HR shown in the EBS.

AOC 9: Oil and Paint House in South Acid Area consists of the area where a methylene chloride release was detected in the South Acid next to the Oil and Paint House. This AOC is located in Parcel 3-6(3)HR shown in the EBS.

These sites are consolidated under SAAP-067.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
VOCs, SVOCs, POL
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

STORAGE MAGAZINES NOT PART OF SWMU 15 & 16 SAAP-110 (AOC 10)

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

AOC 10 consists of 80 storage magazines (~541 acres) not included in SAAPs (SWMUs) 15 and 16, on the southern end of the plant. These magazines were used to store processed powder and propellants. This AOC is located in Parcel 4-1(1) shown in the EBS.

During USACHPPM's 2003 RRSE sampling event, arsenic was the only compound to exceed its respective Region IX PRG value, but was below background level. Pesticide residues (assumed to be from proper application) below the floors exceed residential risk levels.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Pesticides, Explosives, SVOCs
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI

PROPOSED PLAN

Additional samples will be taken to better delineate the pesticide levels.

FORCED AIR DRYERS AND REST, SCREEN AND CAN PACK HOUSES, AOC 11

SITE DESCRIPTION

Not in AEDB-R.

AOC 11 consists of over 50 buildings designated as Forced Air Dryers, Rest Houses, Screen Houses, and Can Pack Houses in Parcel 5-10(7)HR shown in the EBS. Located in the west section of the plant, this area processed both solvent and solventless propellant.

This site was sampled by USACHPPM in 2003 for SVOCs, nitrates, and heavy metals. Arsenic was the only compound to exceed the EPA Region IX PRG value and local background.

USACHPPM's March 2003 RRSE Report recommends no further action for this site.

STATUS

RRSE RATING:

Low

CONTAMINANTS:

Metals, Explosives, SVOCs

MEDIA OF CONCERN:

Soil

COMPLETED PHASE:

None

CURRENT PHASE:

RC

PASTE AIR DRY FACILITIES
SAAP-112 (AOC 12)

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

AOC 12 consists of the former Paste Air Dry facilities in Parcel 5-13(7)HR(P) shown in the EBS. Located in the center of the facility, this site consists of 16 buildings (36 acres) used as paste drying facilities that were part of the N–line operations. All of the buildings have been burnt with only foundations remaining.

The RRSE sampling conducted by USACHPPM in March 2003 analyzed for metals, SVOCs, NC, and NG. Arsenic and lead exceeded the EPA Region IX PRG value.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
Metals, Explosives, SVOCs, NC, NG
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI

PROPOSED PLAN

Additional samples will be taken to better delineate the contaminations.

GENERAL WAREHOUSES (8037 SERIES) AOC 13

SITE DESCRIPTION

Not in AEDB-R.

AOC 13 consists of eight large warehouses that have been listed as containing such items as unused NQ drums (pre-NQ packaging) storage, acid plant parts and supplies, and 3X contaminated equipment interim storage. The 8037 series warehouses are located in Parcel 5-14(7)HR(P) shown in the EBS. The parcel delineation includes the warehouse buildings and adjacent railroad/loading dock areas. This site is not ER,A eligible, since there is no reason to believe that a release of hazardous material ever took place.

STATUS

RRSE RATING:
NE
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
None

ROBERT'S LAKE
SAAP-114 AOC 14

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

AOC 14 consists of Robert's Lake and drainage ditches (12 acres) from the G-line. Robert's Lake is located south of the Old Sanitary Landfill and west (downgradient) of the G-line ditches. Robert's Lake current and future use is for recreation. This AOC is located in Parcel 6-7(7)HR(P) shown in the EBS.

This site was sampled by AEHA in 1994 and was sampled for SVOCs, metals and explosives. Arsenic and lead were the only compounds in surface water to exceed EPA Region IX PRGs. Arsenic in sediment exceeded EPA Region IX PRGs. CHPPM performed a Relative Risk Site Evaluation using the 1994 data and recommended further action on this site.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Surface Water, Sediment
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Perform an RFI to delineate sediments requiring excavation. Excavate, treat, and dispose of ~17,000 cy of contaminated sediment. Restore pond once excavation is complete.

HAZARDOUS ANALYSIS TESTING LAB
SAAP-115 AOC 15

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

AOC 15 is the Hazardous Analysis Testing Laboratory (1 acre) located in the north central portion of the plant. This area consists of an indoor firing range which has piles of sand containing expended small-caliber test projectiles. The sand piles are situated just outside a door on the south side of the building and a door on the north side of the building. Both sand piles measure 60 X 30 feet. This AOC is located in Parcel 7-2(5)HR shown in the EBS.

During 2003, the site was sampled by USACHPPM. Lead and arsenic in soil were the only contaminants to exceed Region IX PRGs.

STATUS

RRSE RATING:
Medium
CONTAMINANTS:
Metals
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI

PROPOSED PLAN

Complete Interim Removal Action of 77 cy of soil. Excavate, treat, and dispose of soil on-site. Perform confirmation sampling and restoration of area.

NC PRODUCTION LINES SAAP-116 (AOC 16)

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

AOC 16 consists of the former NC (nitrocellulose) production lines (107 acres) located in the north central portion of the plant. Each production line is approximately 10 acres in size and contains 10 or more buildings. The majority of the buildings have been burnt and all that remains are the concrete foundations. The NC Production Lines produced NC during the periods of 1943-1960, and 1965-1971. Nitrocellulose and other hazardous constituents were released to the soil and potentially the groundwater in the proximity of the production facilities. This AOC is located in Parcel 8-2(7)HR(P) shown in the EBS.

During 2003, the site was sampled by USACHPPM. Arsenic, lead and SVOCs were detected in soil above the EPA Region IX PRGs.

STATUS

RRSE RATING:
Medium

CONTAMINANTS: Lead, NC, NG, SVOC, VOCs, Sulfates, Nitrates

MEDIA OF CONCERN:
Soil

COMPLETED PHASE:
RFA

CURRENT PHASE:
None

FUTURE PHASE:
RFI, CMD, CMI

PROPOSED PLAN

Complete RFI to verify quantities outside of foundations. Perform remedial design for soil removal and disposal. Perform remedial action to excavate and dispose of ~14,000 cy of soil on-site. Sample and restore excavated area.

NQ PRODUCTION FACILITIES
AOC 17

SITE DESCRIPTION

Not in AEDB-R.

AOC 17 includes all buildings which have been identified as being potentially contaminated with explosives located in Parcel 9-5(6)HR shown in the EBS. The NQ Production Facilities are located in the northwest portion of SFAAP. Based a review of the documents, visual inspections and interviews, there is evidence that NQ and GN contamination was observed leaching out of walls and floors during the 1998 EBS visual inspection.

During 2003, the site was sampled by USACHPPM for NQ and nitrates/nitrites with no detections above EPA Region IX PRG values.

CHPPM's March 2003 RRSE Report recommends no further action at this site. Once the buildings are demolished, if contamination is found it will be addressed under SAAP-047.

This site is in groundwater OU 1.

STATUS

RRSE RATING:

Low

CONTAMINANTS: NQ, GN, Nitrates, Sulfates, SVOCs, VOCs

MEDIA OF CONCERN:

Soil

COMPLETED PHASE:

None

CURRENT PHASE:

RC

TRENCH DISPOSAL AREA A3
AOC 18

SITE DESCRIPTION

Not in AEDB-R.

AOC 18 is the Trench Disposal Area (34 acres) identified as A3 in 1948 aerial photographs from disturbed ground west of SAAP-001, the Classification Yard located in the northeast portion of SFAAP.

The Army obligated funds to conduct site characterization sampling in 2003 as follow-up work to SAAP-001 characterization and RFI completion. Lead was detected above regulatory levels.

STATUS

RRSE RATING:
High
CONTAMINANTS:
Lead
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA, RFI, CMD
CURRENT PHASE:
CMI (funded)
FUTURE PHASE:
RC

PROPOSED PLAN

The Army will remove hot spots in 2004 in conjunction with completing SAAP-001.

TRENCH DISPOSAL AREA A4
AOC 19

SITE DESCRIPTION

Not in AEDB-R.

AOC 19 (0.6 acres) is the Disposal Site identified as A4 in 1948 aerial photographs from disturbed ground on the southwest end of SAAP-001, the Classification Yard located in the northeast portion of SFAAP.

The Army obligated funds to conduct site characterization sampling in 2003 as follow-up work to SAAP-001 characterization and RFI completion. There were no contaminants detected above regulatory limits. Therefore, the Army recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

TRENCH DISPOSAL AREA A5
AOC 20

SITE DESCRIPTION

Not in AEDB-R.

AOC 20 (0.5 acres) is the Disposal Pit identified as A5 in 1948 aerial photographs from disturbed ground east of SAAP-001, the Classification Yard located in the northeast portion of SFAAP.

The Army obligated funds to conduct site characterization sampling in 2003 as follow-up work to SAAP-001 characterization and RFI completion. There were no contaminants detected above regulatory limits. Therefore, the Army recommends no further action at this site.

STATUS

RRSE RATING:
Low
CONTAMINANTS:
None
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
None
CURRENT PHASE:
RC

TRENCH DISPOSAL AREA A6
AOC 21

SITE DESCRIPTION

Not in AEDB-R.

AOC 21 (0.1 acres) is the Disposal Trench identified as A6 in 1948 aerial photographs from disturbed ground south of SAAP-001, the Classification Yard located in the northeast portion of SFAAP.

The Army obligated funds to conduct site characterization sampling in 2003 as follow-up work to SAAP-001 characterization and RFI completion. There were no contaminants detected above regulatory limits. Therefore, the Army recommends no further action at this site.

STATUS

RRSE RATING:

Low

CONTAMINANTS:

None

MEDIA OF CONCERN:

Soil

COMPLETED PHASE:

None

CURRENT PHASE:

RC

OLD RECLAMATION YARD
SAAP-122 (AOC 22)

SITE DESCRIPTION

This site will be opened in AEDB-R in spring 2004.

The Old Reclamation Yard (13 acres) is located in the northeast portion of the plant. Disturbed ground in a fenced area south of the classification area was observed in 1948 aerial photographs (A8). A site walk was conducted in February 2003. The following was observed: metal debris, stressed vegetation and bare spots.

Soil samples were collected by USACHPPM and analyzed for SVOCs, VOCs, total metals, and PCBs with six compounds exceeding their respective Region IX PRG values, including PCBs, SVOCs and metals.

STATUS

RRSE RATING:
High
CONTAMINANTS:
POL, SVOCs, VOCs, Metals, PCBs
MEDIA OF CONCERN:
Soil
COMPLETED PHASE:
RFA
CURRENT PHASE:
None
FUTURE PHASE:
RFI

PROPOSED PLAN

Perform RFI to define areas requiring excavation of contaminated soil. Excavate, treat and dispose of ~6,500 cy of contaminated soil.

Schedule

PAST MILESTONES

IRP Phase	Completion Date
IRP PA Initiation	April 1980
RFA	September 1990
Community Relations Plan	February 1997
Non-RCRA Groundwater Well Closures	September 1995
IRA at SAAP-050 South	August 1997
IRA at SAAP-050 North	July 1999
RA at SAAP-010/011	July 2000
IRA at SAAP-018, 032-035	June 2002

PROJECTED MILESTONES

IRA at SAAP-001, 019, 039
RA at SAAP-002, 003, 004, 005, 006, 007, 008, 009, 010, 012, 014, 017, 018, 020, 021, 022, 024, 025, 026, 030, 031, 036, 037, 038, 040, 045, 046, 047, 051, 053

- RIP at all IRP sites	2009
- Completion of Long-term Monitoring	2035

NO FURTHER ACTION SITES

SAAP-011	F-Line Area Settling Ponds
SAAP-023	New Explosive Waste Burning Ground
SAAP-027	NQ Area SAC & LWTP Evaporative Lagoons
SAAP-028	Waste Calcium Carbice Treatment Area
SAAP-029	Industrial Wastewater Lagoons
SAAP-032	Lead Decotamination & Recovery Unit
SAAP-034	Fire Corners Settling Ponds
SAAP-042	Temporary Sanitary Landfill

Sunflower AAP IRP Schedule

(Based on current funding constraints)

AEBD-R #	PHASE	FY05	FY06	FY07	FY08	FY09	FY10+
SAAP-001	IRA						
SAAP-002	RI/FS						
	RD						
	RA						
	LTM						
SAAP-003	RD						
	RA						
SAAP-004	RI/FS						
	RD						
	RA						
SAAP-005	RI/FS						
	RD						
	RA(C)						
SAAP-006	RI/FS						
	RD						
	RA						
SAAP-007	RI/FS						
	RD						
	RA						
	LTM						
SAAP-008	RI/FS						
	RD						
	RA						
	LTM						
SAAP-009	RI/FS						
	RD						
	RA						
	LTM						
SAAP-010	RD						
	RA						
SAAP-012	RI/FS						
	RD						
	RA						
SAAP-013	LTM						
SAAP-014	RD						
	RA						
	LTM						
SAAP-015	RI/FS						
SAAP-016	RI/FS						
SAAP-017	RI/FS						
	RD						
	RA						
	LTM						
SAAP-018	RI/FS						
	RD						
	RA						
	RA						
	LTM						
	LTM						
SAAP-019	IRA						

Sunflower AAP IRP Schedule

(Based on current funding constraints)

AEBD-R #	PHASE	FY05	FY06	FY07	FY08	FY09	FY10+
SAAP-020	RD						
	RA						
	RA(O)						
	RA(O)						
	RA(O)						
	LTM						
	LTM						
SAAP-021	RD						
	RA						
SAAP-022	RA						
SAAP-024	RI/FS						
	RD						
	RA						
	LTM						
SAAP-025	RI/FS						
	RD						
	RA						
	LTM						
SAAP-026	RI/FS						
	RD						
	RA						
	LTM						
SAAP-030	RI/FS						
	RD						
	RA						
SAAP-031	RI/FS						
	RD						
	RA						
SAAP-033	LTM						
SAAP-035	LTM						
SAAP-036	RI/FS						
	RD						
	RA						
SAAP-037	RI/FS						
	RD						
	RA						
SAAP-038	RD						
	RA						
SAAP-039	IRA						
SAAP-040	RI/FS						
	RD						
	RA						
SAAP-041	LTM						
SAAP-043	RI/FS						
SAAP-045	RI/FS						
	RD						
	RA						
	RA(O)						
	LTM						
SAAP-046	RI/FS						
	RD						
	RA						
SAAP-047	RI/FS						
	RD						
	RA						

Sunflower AAP IRP Schedule

(Based on current funding constraints)

AEBD-R #	PHASE	FY05	FY06	FY07	FY08	FY09	FY10+
SAAP-048	LTM						
SAAP-049	RI/FS						
SAAP-050	LTM						
SAAP-051	RI/FS						
	RD						
	RA						
SAAP-052	RI/FS						
SAAP-053	RI/FS						
	RD						
	RA						
	LTM						
SAAP-054	RI/FS						
SAAP-058	RI/FS						
	RD						
	RA						
SAAP-060	RI/FS						
	RD						
	RA						
SAAP-063	RI/FS						
	RD						
	RA						
SAAP-064	RI/FS						
	RD						
	RA						
	LTM						
SAAP-065	RI/FS						
	RD						
	RA						
	LTM						
SAAP-066	RFI						
SAAP-067	RI/FS						
	RD						
	RA						
SAAP-101	RFI						
SAAP-110	RFI						
SAAP-112	RFI						
SAAP-114 (AOC 14)	RFI						
	RD						
	RA						
SAAP-115	IRA						
SAAP-116 (AOC 16)	RFI						
	RD						
	RA						
SAAP-122 (AOC 22)	RFI						
	RD						
	RA						

REM/IRA/RA Assessment

Past REM/IRA/RA

IRA - SAAP 50, Disposal Site East of the Classification Yard

Lagoon Closure performed as Remedial Action in FY97 (Total Construction

IRA – SAAP 50 North, Disposal Site East of Classification Yard

RA – SWMU 10/11, F-Line Ditches and Settling Pond

IRA – SAAP-001, 002, 019, 032, 033, 034, 035, FY02

Current REM/IRA/RA

RA - SAAP-021, 022

Community Involvement

On May 6, 1998, Sunflower conducted the first RAB meeting with 17 community members attending. Six additional positions were created as follows: two for the Army and one each for the operating contractor, EPA, KDHE and COE. RAB meetings were conducted monthly for the first six months and now meet bimonthly.

Previous meetings included activities such as :

- An installation tour

- Individual site briefings (including discussion of past practices and existing contamination)

- Educational presentations (risk assessment, how investigations are conducted, explanation of technical documents, etc.)

- Land use plan briefings presented by Johnson County

- Presentation by potential developer on the property to explain their proposal for potential site remediation

The RAB will continue bimonthly meetings.